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The Effects of a Structured and Unstructured Kindergarten Program on the Readiness Scores of Children in Selected Public Schools in Lafayette Parish, Louisiana.

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THE EFFECTS OF A STRUCTURED AND UNSTRUCTURED KINDERGARTEN PROGRAM ON THE READINESS SCORES OF CHILDREN IN SELECTED PUBLIC SCHOOLS IN LAFAYETTE PARISH, LOUISIANA

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TABLE OF CONTENTS

Page

APPENDIXES

LIST OF TABLES

Table | Page

Table

Table | Page

Table | Page

Table Page

LIST OF FIGURES

ABSTRACT

The major purpose of this study was to determine if there was a significant difference in readiness test scores between students who participated in a structured kindergarten program and those who participated in an unstructured program. This investigation also sought to examine the achievement of students relative to certain variables, such as morning and afternoon session, race, sex, preschool attendance, French spoken in the home, place of residence, birth order, and father's years of education. The relationship of variables to test scores was studied in terms of the total population of kindergarten children, as well as in terms of the interaction of program with the above mentioned variables.

Randomly assigned kindergarten children in twelve public schools in Lafayette Parish, Louisiana comprised the sample (N = 645). Approximately one-half of this sample was assigned to an experimental group (N = 379) which received structured, early reading instruction using Ginn and Company's SWRL Kindergarten Program. The other half of the students was assigned to the control group (N = 266) and was instructed in accordance with the traditional kindergarten curriculum as outlined in Lafayette Parish's Kindergarten Curriculum

Guide. In the fall, one-half of the total sample (N = 327) was pre-tested with the Boehm Test of Basic Concepts, Form A, following a Solomon Four-Group experimental design of pre-testing and post-testing, in order to determine if any practice effect resulted from the administration of the pre-test. The entire population was post-tested in May, 1973, using two instruments: the Boehm Test of Basic Concepts, Form B and the Clymer-Barrett Prereading Battery.

As an experimental precaution, a replication study was incorporated into the design. Five schools involved in the main study had both experimental and control classes which were drawn randomly from the same kindergarten population. The results from these five schools were analyzed separately and used to corroborate the findings of the main study. The data were subjected to a multi-way classification analysis of covariance using pre-test scores and father's years of education as covariables.

The following conclusions were reached. Overall, the structured kindergarten program appeared to be more beneficial than the unstructured program. There were significant differences in favor of the structured program in test scores on both the Boehm post-test and the Clymer-Barrett. In looking at the interactions between the two programs and the variables tested, it

appeared that neither the structured nor the unstructured program was more advantageous for morning or afternoon students, boys or girls, rural or urban students, those who attended preschool or those who did not, or those from homes in which French was spoken or those from homes in which it was not. However, the structured program appeared to be more advantageous than the unstructured for older students.

From an examination of the data on the relationship of the variables studied to the post-test readiness scores, the following results were indicated. Highly significant and positive relationships were found between readiness scores on both post-tests and the covariables of father's years of education and pre-test scores. Significance on only one of the post-tests was found for the variables of sex, French spoken in the home, place of residence, and race. Girls scored significantly higher than boys on the Clymer-Barrett; those from non-French speaking homes scored significantly higher than those from French speaking homes on the Clymer-Barrett; and those from urban areas scored higher than those from rural areas on the Boehm post-test. Despite some indications of significance, the number of black students was too limited to make a valid comparison of the effect of race. No significant relationship to readiness scores

as measured by either test was found for the variables of session, preschool attendance, or birth order.

Chapter 1

INTRODUCTION

The volume of print which appears in the press, educational journals, magazines and books of this decade, attests to the concern of both educators and laymen as to the methods by which children are being taught to read. This literature contains many expert, but differing opinions concerning the recent trend of early reading instruction. Many of the opponents fear that too much emphasis on early reading may cause the child to have a less rounded development. They generally agree that the best way to insure reading readiness is to provide the child with a rich and varied background of experiences.

The advocates of early reading, on the other hand, express the belief that today's child has had more varied experiences and is, therefore, ready for reading activities at an earlier age. As stated by Ollila (1971:1):

> . . . Some recent research studies have attempted to prove that (1) early readers do maintain their lead in reading achievement, (2) early readers have better attitudes toward reading, (3) there is no evidence that early reading is harmful to a child's eyesight, (4) early reading will not result in psychological and social problems. . . . However, advocates of early reading should feel a pressing need to provide better guidelines grounded in related research.

The elementary school curriculum has traditionally set the beginning of reading instruction at the first grade level with the popular idea that six is the age when most children can successfully read. Held (1969) has contended that most of the conclusions which have been drawn concerning the best starting mental age for reading have been based on research that was done in the 1930's. According to Ollila (1971), however, a number of experimental studies in recent years have shown that children can successfully learn to read as early as three years. Thus, a "nurturing movement" was begun which brought pressures from educators and parents to begin reading at earlier ages. Advocates and opponents of early reading took sides and numerous research studies were initiated on topics relating to reading in kindergarten and the characteristics and readiness factors related to early readers. The massive influx of readiness and television programs oriented toward teaching letters and word families to preschoolers, added to the many books now available to assist parents in teaching their own children to read at early ages, give ample evidence of the strong trend toward early reading instruction.

Supporters of early reading feel that today's children have changed in many ways and are involved in more varied activities than the children of earlier

years. They offer evidence of the greater vocabularies possessed by children now, the expanded and diverse communication media, and greater mobility of many families as possible contributory factors that have combined to provide more children with a broader background of experiences and greater exposure to the printed word. Advocates also emphasize the increasing numbers of children who attend different types of preschool programs which, they maintain, are not unlike traditional kindergartens. They charge that the kindergartens of today have remained rather static. Supporters further contend that today's early childhood educators should re-evaluate their programs and include some form of reading. They feel that many children are ready and eager to read and would profit from instruction at the kindergarten level (Mason, 1972; Held, 1969).

Opponents of early reading agreed that kindergarten children should be treated differently from their counterparts of one or two decades ago. Here the agreement ends: they do not feel that teaching reading in kindergarten is the way to do it. They fear that too much emphasis on early reading could lead to a neglect of important social and sensory-motor areas. Their argument is for a more horizontal approach through the development of a solid foundation of broadened experiences and a consolidation of learnings to insure that all

children would be more apt to be ready for reading activities at a later age. Some warn that children pushed into reading too soon may never read as well as they might have read, had reading instruction been delayed (Ollila, 1971).

Speaking in support of the opposition and adding to the confusion, LaConte (1970) reported that kindergarten teachers generally agree that most kindergarten children are just not ready to read, but those who are ready (or who can already read) should be taught in kindergarten. Further the author found kindergarten teachers in agreement that so few children are ready that it is not worth changing present kindergarten programs. Teachers in the survey expressed a preference for informal activities; yet over one-third of them were teaching some reading skills and using some reading materials. His findings, however, did not bring joy to the opposition as he concluded that no matter what teachers believe or what they believe they believe, when it comes to teaching reading, at least in the foreseeable future, reading in kindergarten is here to stay.

Brzeinski (1971:5-6) summed up the feelings of advocates of early reading in his statement:

> . . . Today the desirability of early childhood education in reading is well-documented. Researchers suggest that we must reorder our educational priorities; we must give additional emphasis to early childhood education. . . . The readiness doctrine

> which imposes an age six chronological barrier to formal learning, sentences many children to failure, and ignores the learning ability of others.

Mention must be made of those who take a more moderate view on the question and incorporate what they feel to be the best of both sides into their philosophy. The opinions of this group might be summarized in the following statement by Hymes (1970:80):

> . . . A child development point of view cannot lead one to say: No, don't teach . . . postpone. It has to say: Teach, and teach as much as each child is comfortably, naturally, easily, rightfully ready for.

Thus the controversy over early reading instruction continues in full force. Proponents and opponents alike present convincing arguments to support their beliefs. One fact remains: there is inadequate research presently available to indicate conclusively the full effects of early reading instruction upon the child and his advancement in reading skills. It was the purpose of this study to yield additional data on the following questions concerning early reading instruction.

STATEMENT OF THE PROBLEM

The problem was to determine if there was any difference between the readiness scores of students in an experimental group which was instructed using a structured kindergarten program and those of a control group which was instructed in a traditional, unstructured kindergarten program.

Questions to Be Answered

This study was concerned with the following specific questions:

1. Is there a difference between the readiness scores of students in the experimental group and those in the control group with reference to the following factors?

   a. Black students in the experimental vs. black students in the control group

   b. White students in the experimental vs. white students in the control group

   c. Morning experimental vs. morning control

   d. Afternoon experimental vs. afternoon control

   e. Chronological age: older one-half and younger one-half in experimental vs. older one-half and younger one-half in control

   f. Experimental boys vs. control boys

   g. Experimental girls vs. control girls

2. Is there a difference between the readiness scores of students in the total sample with reference to the following factors?

   a. Morning session vs. afternoon session

   b. Chronological age: older one-half vs. younger one-half

   c. Father's educational level

   d. Boys vs. girls

   e. Participation vs. non-participation in preschool experiences

f. Rural vs. urban

g. French spoken in the home vs. French not spoken in the home

Differences were accepted as significant at the .05 level.

Delimitations of the Study

The sample was comprised of thirty kindergarten classes of 645 pupils in the morning and afternoon sessions of twelve public elementary schools located in Lafayette Parish, Louisiana. The study commenced with the pre-testing of one-half of the population during the first week of September, 1972, and ended with the post-testing of the total sample during the first two weeks of May, 1973.

Importance of the Study

Early reading and structured readiness are a *fait accompli* in some school systems. Widely conflicting claims are made by the publishers of various new programs. Within the plethora of new materials and programs may exist some which are potentially harmful to young children or simply not effective, while others may contain some of the long-awaited answers to the many problems confronting the teaching of reading.

The results of this study have contributed on a local basis to the information that the Lafayette Parish School Board has had available to them to decide the

direction that their kindergarten program will take in the future. This, it was felt, was a worthy contribution on its own. However, the possibilities for generalizing from this sample were excellent as it contained a cross-section of the communities studied. Thus it was hoped that the results of this study would add to the body of research on the use of a structured reading approach in kindergarten and on some other possible variables which affect readiness.

Definition of Terms

Kindergarten. Half-day, pre-first grade, public school education, consisting of a morning or afternoon section, for children who were five years old by December 31 of that academic year.

SWRL Kindergarten Program. The kindergarten program developed by the Southwest Regional Laboratory for Educational Research and Development, Ingleside, California (SWRL), and published commercially by Ginn and Company, consisting of two major components: The Instructional Concepts Program, a twelve week program designed to teach ninety-six concepts which pertain to colors, sizes, amounts, positions, pre-math and pre-reading terms; and The Beginning Reading Program, in

which the beginning reading skills are developed. These include recognition of word elements and letter names, a reading vocabulary of one hundred words, and a way of attacking words composed of learned elements.

Older one-half. Those children born prior to July 1, 1966 who attended kindergarten in the selected schools of Lafayette Parish, Louisiana during the 1972-73 school year.

Younger one-half. Those children born after June 30, 1966 who attended kindergarten in the selected schools of Lafayette Parish, Louisiana during the 1972-73 school year.

Readiness scores. The raw scores obtained from the Boehm Test of Basic Concepts, Forms A and B and the Clymer-Barrett Prereading Battery.

Preschool experiences. Organized experiences enjoyed by children prior to entering a regular kindergarten, including nursery schools, day care centers, and Head Start Programs.

Lafayette Parish Guide to Kindergarten Experiences. A curriculum guide developed by Lafayette Parish school personnel in 1968-69 for use with their kindergarten program.

SOURCES OF DATA

The Lafayette Parish School Board's official records were employed to collect such information concerning students, individual schools, teachers, and programs which were deemed necessary in the conducting of this study.

EXPERIMENTAL PROCEDURE OF THE STUDY

The population for this study was composed of kindergarten children who were enrolled in twelve public schools of Lafayette Parish, Louisiana. All pupils who remained in the schools for the treatment period were included in the study.

Experimental and control classes were selected from lists supplied by the Lafayette Parish School Board Office. The selection was based on the following criteria: racial composition of the school, rural or urban location, and father's years of education. The additional variable of pre-test scores was also considered in the examination of the two groups for comparability. The children in the study were assigned to the classes on a totally random basis, as they registered for kindergarten.

The Boehm Test of Basic Concepts, Form A, was administered in September, 1972, as a pre-test to one-half of the students in the experimental and control groups by

the classroom teachers under the direction of the researcher. This was done to permit an examination of the pre-test for independence. By allowing the researcher to compare the post-test scores of those pre-tested with those who were not pre-tested, the possible effect of the administration of the pre-test on the post-test scores was studied. A further safeguard was incorporated into the study. This consisted of a replication of the major study in the form of making provision for separate analysis of the data of five schools which had both experimental and control programs. These results were compared with the results of the twelve schools to determine the extent of agreement.

The kindergarten classes then proceeded with their assigned treatments according to the various manuals and curriculum guides provided by the Parish for the two programs. Post-tests of the Boehm Test of Basic Concepts, Form B, and the Clymer-Barrett Prereading Battery were administered in May, 1973 by the classroom teachers again with direction from the researcher.

The tests were scored by the researcher, and the information was compiled, coded, and transferred to computer cards. The data were then subjected to multi-way classification analysis of variance using the least squares technique, which is a statistical estimation technique employed to account for initial disproportionality in the numbers of observations in the various groups.

The statistical findings were summarized and conclusions drawn.

ORGANIZATION OF THE STUDY

The study was organized into five chapters: The necessary introductory statements were made in Chapter 1; the review of related literature was summarized in Chapter 2; the experimental procedures and sources of data were described in Chapter 3; presentation and analysis of data collected comprised Chapter 4; and findings, summaries, conclusions, and recommendations for future study concluded the study in Chapter 5.

Chapter 2

REVIEW OF THE RELATED LITERATURE

As a preface to her study concerning teacher's attitudes toward reading in kindergarten, Zaruba (1967:252) summarized the controversy in this statement:

> . . . For years educators have been troubled by conflicting opinions regarding the optimum time for beginning reading instruction with young children. There has been much contention as to whether effective reading instruction could be begun with kindergarten children. At the time of this writing, some educators believed that young children were ready for reading at an earlier age due to rich experiences since infancy; some believed earlier reading was demanded by world requirements; and yet others viewed the interest in earlier reading as a pressure caused by the general anxiety of teachers and parents for the successful school progress of many children.

In her study of kindergarten and primary teachers' attitudes toward early reading, Zaruba (1967) concluded that most kindergarten and primary teachers had positive attitudes toward reading instruction in kindergarten. The survey further revealed that the actual controversy over reading in kindergarten revolved around the question of method of instruction, with primary teachers appearing to place greater emphasis on the necessity of formal reading skills and activities and parental involvement than did the kindergarten teachers.

In a more recent survey of kindergarten teachers in three eastern states, La Conte (1970) looked at the use of planned reading sessions and reading readiness workbooks. The reported data indicated that in 1963, 27 percent of the surveyed kindergarten teachers used planned reading periods, while in 1969, the number had risen to 40 percent. At the same time, the percentage of kindergarten teachers using workbooks had risen from 14 percent in 1963 to 48 percent in 1969. Further, La Conte found that resistance to teaching reading in kindergarten was related to the length of teaching experience, with the more highly experienced teachers reportedly more negative toward the teaching of reading. In summary, however, she felt that there was growing trend toward more reading instruction in kindergarten.

READINESS AND EARLY READING STUDIES

Durkin, a more moderate advocate for early reading, felt that children could be taught to read at an early age, but tempered it with the belief that this early introduction to reading should be reserved for those who showed a definite readiness for it (Durkin, 1972). Durkin (1962) made a study in Oakland, California of all first graders who had learned to read at home. At the end of the third grade she compared the reading achievement of the early readers against that of the rest

of the class. The early readers ranged from 4.4 to 6.0 on a standardized reading achievement test with a median of 5.0, while the control group ranged from 2.0 to 6.0 with a median of 4.3. One of the most interesting aspects of this study was the fact that early readers of lower ability were found to have made greater gains than would have been expected of them when their scores were compared to their counterparts in the non-early reading group (Durkin, 1962).

Barnes (1971) made a comparison of the academic readiness gains of middle-class kindergarten and first grade students using two different approaches to readiness: the traditional readiness program based on maturation as the control group and the Harper-Row Learning Readiness System as the experimental group. The sample contained all kindergarten and first grade children in normal classes in two schools, making a total of 416 students. The children were pre-tested using the Learning System Seriation Test, the Peabody Picture Vocabulary Test and the Draw-a-Man Test and ranked as high or low achievers on the basis of the Draw-a-Man Test. At the end of the sixteen week instruction period, the children were post-tested using the former two tests along with the Metropolitan Readiness Test for kindergarten children and the Cooperative Primary Reading Test 12A. Post-test scores were subjected to an analysis of

covariance and the following findings were reported: kindergarten children using the Learning Readiness System made greater gains as measured by all tests. First grade children using the LRS made greater gains as measured by the Cooperative Primary Reading Test, but no significant gains in listening vocabulary or pre-reasoning ability. The researcher indicated a need for further research to determine whether such gains were maintained over a period of time.

A similar study by Kelley and Chen (1967) attempted to describe the reading achievement of children who experienced formal reading sessions as opposed to those children who experienced no reading sessions in kindergarten. Kelley and Chen reported the following results: the reading achievement scores of the groups of kindergarten children in the formal planned reading instruction program were significantly higher than those who did not participate in the instruction. An examination of the data suggested that children with higher than average intelligence scores and readiness scores, higher than average mental ages, and fathers who have more years of education than is average tend to learn to read earlier than children who tend to be average or below in the above variables.

Officials in the Denver Public Schools also observed that greater numbers of children who were able

to read were entering school. Thus, they asked, "could a planned program of beginning reading instruction produce greater numbers of children who could learn to read successfully in the home or in the kindergarten?" (Brzeinski, 1964:16).

In order to attempt to answer this question, the Denver Public Schools began a longitudinal research study in the fall of 1960 to determine the effectiveness of beginning the teaching of reading in kindergarten. The directors of this study were Paul McKee and Joseph Brzeinski (1964). Pupils in the project were studied through the fifth grade. The study involved 122 classes randomly assigned by school, with 61 classes in the control group and 61 classes in the research group, a total of approximately 4000 pupils. Control classes followed the regular kindergarten program, while the research classes received instruction in beginning reading activities for about twenty minutes per day.

At the end of the first year, the data indicated that kindergarten-age children were able to recognize letter forms and to learn names and associate letter sounds. The pilot program of systematic instruction in beginning reading skills appeared more effective than the regular program. Further, children taught beginning reading skills in kindergarten did not forget them during the summer intermission.

By the end of first grade, analysis of test scores showed that the pilot groups who had received reading instruction in kindergarten scored significantly better than the regular kindergarten group on the Gates Primary and Advanced Primary Reading Tests. The pilot groups were significantly better readers.

The Denver Project continued until the children who had begun reading in kindergarten completed the fifth grade. The final report of this project did nothing to diminish the early optimism, according to Personke (1968). The experimental group that had received early instruction and the adjusted program, clearly outgained all of the other groups. These gains were maintained through the fifth grade. However, Personke (1968:576) stated:

> . . . Evidence from the modified experimental and control groups provides reason to credit some of the gain to the adjusted program employed. Whereas the experimental group achieved significant gains over the delayed control group, the latter also achieved significant gains over the control group. Only the short-term experimental groups did not seem to profit from the experience.

Personke (1968:577) added, however:

> . . . The program deserves plaudits for recognizing that early gains cannot be maintained if no further adjustments are made in the program to keep pace with growth and learning rates. Indeed, the inability of the short-term group to profit from this experience firmly supports the wisdom of long-range programs.

The possibility that the early teaching of reading might cause an increased incidence of problems related to vision, hearing, or social and academic adjustment was examined. Evidence showed the same percentage and types of problems for both groups, suggesting that teaching beginning reading in kindergarten neither created nor prevented problems in these areas.

Schoephoerster (1966) reported a similar probe into the social and emotional implications involved in introducing a formal program of reading to kindergarten children. In an experiment in Grand Forks, North Dakota, in which reading was introduced, there was not even one incident, according to Schoephoerster (1966:357) which would evidence "frustration, emotional deterioration, or bring about the sowing of the seeds of a permanent dislike for reading."

Another longitudinal study of reading achievement among 134 children who were given an opportunity to read in kindergarten was conducted by Sutton (1969). As the kindergarten year ended, approximately sixty-six children were taking part in the informal reading activities on a regular basis. Approximately sixty-eight children had not yet indicated more than passing interest in reading activities. In April of that year, an objective measurement of reading proficiency resulted in the identification of forty-six children who scored at a level of 1.30 higher

on the Gates Primary Reading Achievement Test. The mean score on the Gates test for these pupils was 1.76.

Throughout grades one to three, the reading achievement of Group A, the forty-six who had scored 1.3 or above, was measured at the end of each semester and compared with the achievement of Group B, those remaining from the kindergarten class who had been excluded on the basis of test scores. Thirty-five other children had moved into the district during the summer and were enrolled at the school for the first time at the beginning of first grade. Since, presumably these had not had reading experiences similar to those in Group A, they formed a third group, labeled Group C.

Based on the results of the Gates Reading Achievement Tests, children in Group A revealed an average of 7.6 months advantage over their classmates in Groups B and C at the beginning of first grade. At the end of grade one, the early readers of Group A were achieving reading equivalents at an average grade level one year above that of Group B, and nearly eight months above that of Group C. At the end of the second grade the advantage of Group A over Group B was one year and one month, and over Group C, it was seven months. By the end of third grade, the children in Group A were, on the average, reading at a grade level one year and 6.5 months beyond that of Group C.

A related longitudinal study of children with and without kindergarten experience was designed to investigate the reading progress of disadvantaged urban Negro children in the New York public schools. These children were studied from the beginning of grade one through grade three.

Children in the study were taught to read by two approaches: Skills Centered and Language Experience. The Stanford Achievement Test was administered to 416 kindergarten and 168 non-kindergarten children at the end of grade one and the Metropolitan Achievement Test at the end of grade two.

Morrison and Harris (1968) reported that Skills Centered kindergarten children did not achieve higher scores than non-kindergarten children when the study was concluded. The indication was that the kind of kindergarten program offered these children did not have a lasting effect on reading performance. However, the authors suggested that further research would be necessary to determine whether third grade achievement would be higher for these children if the kindergarten program stressed activities which were commensurate with subsequent skills centered instruction.

The authors also reported that the Language Experience kindergarten children had scored significantly higher than both the non-kindergarten and the Skills

Centered groups. The researchers concluded, however, that since these children were exposed to kindergarten experiences composed essentially of a language arts program where components of the curriculum were similar to subsequent Language Experience instruction, such continuity of instruction had a beneficial effect on the children involved (Morrison and Harris, 1968).

Karens (1968) reported the results of a study designed to evaluate, through a battery of standardized tests, the effectiveness of two preschool programs upon the long range school performance of comparable groups of children. Subjects for the study were selected from the preschool population of the economically depressed neighborhoods of Champaign-Urbana in central Illinois. One intervention program provided a traditional nursery school experience (N = 30) which worked in conventional ways to improve the personal, social, and motor development of the children. The experimental intervention provided a highly structured program (N = 30) which focused on specific learning tasks chosen from school related curricula, especially designed to enhance language development and cognitive skills.

Each class (N = 15) was divided into three groups on the basis of Stanford-Binet IQ scores with one teacher for each group: a teacher-pupil ratio of 1:5. The teacher-child relationship was considered of primary

importance and the low pupil-teacher ratio allowed differentiation of instruction to provide a high success ratio for each child.

Pre-tests and post-tests were given and Karens (1968:675) concluded the following from the results:

> . . . The effectiveness of directly teaching specific content as well as school readiness skills is illustrated by the Frostig scores and especially by the number readiness test of the Metropolitan Readiness Test. Because cognitive development at more complex levels hinges upon the existence of verbal expression abilities, the language deficit of the disadvantaged child is of critical importance. It is precisely by connecting cognitive development and verbal expression through structured learning situations that the experimental program demonstrated its greatest strength.

A recent longitudinal study of the long-term effects on reading achievement of formal reading instruction in kindergarten was done by Beck (1973). The sample consisted of first through fifth grade students who had attended kindergarten in Oakleaf School in Pittsburgh, Pennsylvania through April, 1973. An experimental group, which had received formal reading instruction, and a control group, which had not received formal reading instruction, were chosen and children were matched on intelligence scores. Beck reported these findings: an analysis of variance and covariance indicated that children of similar intelligence, who received formal reading instruction in kindergarten, achieved better than children who did not receive reading

instruction. These results were reported for all grade levels tested.

Ollila (1971) explored the effects of three commercial reading readiness programs: Ginn and Company's Kit B, Scott-Foresman's First Talking Alphabet, and the Frostig Training Program for the Development of Visual Perception. The sample consisted of forty-eight upper-middle class kindergarten children, who were randomly assigned to groups by sex, with each group having eight boys and eight girls. The pre-tests and post-tests which were given to note growth in readiness were: the Metropolitan Readiness Test, the Clymer-Barrett Prereading Battery, and the Frostig Test of Visual Perception. Group A, those using Ginn's Kit B, made greater gains than the children in the other programs, thus making it necessary to reject the stated null hypothesis. Other significant differences were found between sex and method on Shape Completion and Copy-a-Sentence subtest of the Clymer-Barrett, which revealed that girls using the Ginn Kit B scored less than the other children on these two tests. No significant differences were found on the subtests of the Frostig test despite the fact that one of the groups was taught using the Frostig materials.

Weeks (1965) conducted a study to appraise the effect of systematic use of a commercially prepared

reading readiness program as revealed through tests. Weeks (1965) asked the following questions: What effect does the Scott-Foresman reading readiness program have on children's performance on the Murphy-Durrell Diagnostic Reading Readiness Test? What differences are there between readiness scores at the end of June and the beginning of September? What effect does the systematic use of a structured prereading program have on tensions and anxieties?

An experimental group of fifty-five and a control of sixty-two were alike within .05 confidence level in mental age and readiness factors of auditory discrimination and learning rate. Four classes used the Scott-Foresman materials for nine weeks at the end of the school year and the four classes in the control group did not. Both groups were tested in readiness factors at the close of the nine-week period using the Murphy-Durrell test. Questionnaires were sent to parents at the mid-point and close of the study to determine behavioral changes due to anxiety or tension. Both groups were retested in September.

The findings indicated no significant differences in auditory discrimination and learning rate, but a significant difference at the .01 level of confidence in visual discrimination favoring the control group. Both groups made significant gains over the summer, but there

were no significant differences between the two groups. Thus Weeks (1965) concluded that chronological age and maturity appeared to be closely related with readiness factors as tested. On the basis of the questionnaire and teacher observation, it was concluded that anxiety and tension did not unduly increase. The researcher recommended, however, that similar research using a larger population, other readiness materials, and a more comprehensive reading test should be undertaken.

Emmer (1970) investigated the differences in effectiveness in increasing first-grade reading achievement between a traditional reading program in which no words were taught and a program that began with formal reading instruction in preprimers with no previous reading readiness. The subjects were 137 pupils in six first-grade classes in a middle-class suburban community in central New Jersey. Pre-tests of readiness and intelligence indicated no significant differences between groups before teaching. One group received six weeks of readiness training and ten weeks of reading instruction; the other group received sixteen weeks of reading instruction in basal readers and no readiness training. The students were given as post-tests the reading subtests of the Stanford Achievement Test and the Metropolitan Readiness Test. It was concluded that omitting traditional reading readiness materials from the

first-grade instructional program did not decrease reading achievement and may, in fact, have increased reading achievement. Therefore, it was suggested that first-grade reading instruction should begin with formal reading lessons.

Another first-grade study was designed to determine the effect of shortening the readiness period from seven to eleven weeks to an experimental period of one to three weeks. Readiness workbooks were used by the sample which consisted of fifty-one pairs of first-graders, all of whom had had preschool experience consistent with the professional occupations of the majority of the parents. The children were matched to within three months of chronological age, three points in readiness scores, and by sex. Teachers were equated according to principal observations and previous two years' standardized test results.

Nine null hypotheses were stated and accepted at all stages except for younger girls at nine months. In the findings, girls scored slightly higher than boys, but not significantly at the .05 level; those who entered with chronological ages of seventy-two months or higher achieved at a higher level in the twelve months than younger children (Emmer, 1970).

Miller (1965) made several recommendations based on the findings. Two of these included that all children

should have readiness before formal reading instruction and that there is a need to determine what types of activities promote reading readiness during the pre-school years.

Stanchfield (1971) conducted research over a seven year period to experiment with the effect a variety of materials and types of instruction have on the reading achievement of first-grade children. The objective of the study was to determine whether children taught by a structured reading readiness program would score higher on a test of reading readiness than a control group of children who had not been involved in a program of this kind. Seventeen schools were selected to provide a cross section of socio-economic levels and the ethnic categories. They were then matched with seventeen schools in ethnic origins, academic achievement and socio-economic background. The Murphy-Durrell Reading Readiness Analysis was given to both groups at the end of the school year and a three-way analysis of variance was performed with sex, program, and ethnic group as the main effects. The findings revealed that the experimental group achieved a higher score than was achieved by the control group in both total test and all subtests and that girls as a group scored higher than boys. The major conclusion as stated by Stanchfield (1971:707) added: "Kindergarten children taught in a structured sequential program with appropriate

materials achieve significantly more than those in the regular curriculum."

Roberts (1971) also studied the effects of a structured program. The purpose of her study was to investigate whether a group of disadvantaged Negro children, who had structured language training, made greater gains in reading readiness and reading achievement than a control group.

The population consisted of all first-grade children in a racially segregated elementary school in Tuscaloosa, Alabama. Thirty-three were chosen randomly from a group of sixty-six and tested using the Peabody Picture Vocabulary Test during the second week of school in September and paired on this basis. Matched pairs were randomly assigned to either the experimental or the control group. The experimental group underwent sixteen weeks of structured language training, while the control group received equal instructional time. The post-tests were given at ten, sixteen, and twenty-four weeks using the Lee-Clark Reading Readiness and the Lee-Clark Reading (Primer) Test, Forms A and B and the data were subsequently subjected to the Lindquist Type I analysis of variance.

The following inferences were drawn: both groups showed significant gains in reading readiness and achievement; and the difference between groups in interaction was

not significant and seemed due to other factors. The researcher recommended further study in light of the changes which both groups manifested.

Rubin's study (1972) was undertaken to evaluate the impact of kindergarten programs on boys and girls of the same chronological age. The effects of a year of maturation and out-of-school learning experiences were compared with the effects of exposure to existing kindergarten programs on language and reading skills as measured by the Illinois Test of Psycholinguistic Abilities and the Metropolitan Readiness Test.

Not only did the boys and girls differ in language and readiness skills before kindergarten entrance, but results of this program had a differential impact on the growth of these skills in the two groups. Girls, though more advanced prior to kindergarten, made negligible gains after attendance, while boys derived greater benefit. These data appear to imply that "kindergarten activities serve to stimulate growth in school readiness if the activities are made available at the appropriate developmental period" (Rubin, 1972:273). Thus it appeared that the girls in this study had passed the stage at which the program would have been most beneficial. Whereas the boys who matured more slowly were at a more appropriate developmental level for the program.

Rubin (1972:273) concluded with the statement:

> . . . These findings together with prior investigations that yielded differential results for boys and girls on a variety of educational measures offer evidence of a need to re-evaluate educational goals and programs for children in their early years . . . On the basis of available research evidence, it is reasonable to hypothesize that sex differences encompass more than a simple time differential on a single developmental continuum.

Much of the research concerning early reading has been directed toward the question: Can some five year olds be taught to read? However, the question remains as to whether there is any permanent advantage in this early instruction. A study was done by Morrison, Harris, and Auerbach (1971) which was concerned with the later reading performance of disadvantaged urban black children who had some word recognition ability at the time they entered first grade. Fifty-eight children, 4 percent of the population, were selected on the basis of being able to read one or more words as checked by the Detroit Word Recognition Test. These were matched with a group of non-early readers on the basis of mean score on the Learning Rate Subtest of the Murphy-Durrell Reading Readiness Tests given early in grade one. On all of the first grade pre-tests, early readers showed advantages over the total group significant at the .001 level of confidence. The results on the subtests were unusually high in favor of the experimental group with mean scores averaging almost twice as high as those of the total population (which included the early readers).

In grade two, Form C of the Metropolitan Advanced Primary Test was administered and in April of the third year, Form A was given. Early readers had substantially higher reading scores than non-early readers at the end of grade one and this advantage increased by grade three. There were significant differences on all comparisons except two at the second grade level.

Morrison, Harris, and Auerbach (1971:26) summarized their findings: "Thus it appears that reading skills learned prior to the time the child enters first grade are not detrimental to long-range achievement."

Recently several comparative studies have been reported which have also explored the structured vs. unstructured kindergarten question. One of these was a kindergarten study which was undertaken by O'Donnell and Raymond (1972) to determine if an experimental group which was instructed according to a conceptual-language program would score significantly higher on a battery of standardized tests than a structured, basal reader group. The children and the teachers in the study were randomly assigned to treatment groups. The programs for the two groups were conducted similarly with the exception of a twenty minute segment each day of direct instruction according to the assigned treatment. An additional fifteen minutes per day were later given to the basal reader group for seatwork time at the request of the book

company. Tests were administered after 116 days of instruction and the data were analyzed using analysis of variance and covariance. The results of the study were reported as follows. Children in the conceptual-language classes scored significantly higher than the basal group on the Metropolitan Readiness Test; no significant differences in auditory discrimination on the Wepman Auditory Discrimination Test were found; and students in the conceptual-language program had slightly higher scores on subtests of the Murphy-Durrell Reading Readiness Analysis. When interactions of treatment and intelligence were examined, significant differences with children of all ability levels were noted in favor of the conceptual-language classes. Neither approach, however, favored either boys or girls.

A comparison of the Distar Reading Program, published by Science Research Associates, and an informal language experience program was made by Reichbach (1973). The sample was comprised of 122 children from a lower socio-economic group which was divided into two groups with three kindergarten classes in each group. Pre-tests and post-tests of the Wide Range Achievement Test were given with the following results being reported by Reichbach. Children who were instructed using Distar scored significantly higher in two subtests and as well as the children in the language experience group on the

total score. There was no significant difference between the achievement of boys and girls. However, it was noted that teachers of the Distar program devoted more time to reading readiness than teachers of the language experience program.

Another comparison study was made by Prince (1974) of three types of kindergarten programs: the commercially prepared Kindergarten Keys, the Leon District program as it existed at the time, and a modification of the program with a strong emphasis on integration of all subjects. This study was done in different types of schools, urban or rural and self-contained or open-pod, and with students from different socio-economic levels. The sample was comprised of eighty-seven children in nine elementary schools who were administered Levels K and L of the Test of Basic Experiences. The results showed that no overall interactions were significant among factors of type of school, type of program, or socio-economic status. Significant differences were found in the data for social studies and mathematics, but not for language arts. The Leon District program without modification appeared to be most advantageous in social studies and math, followed by the commercially prepared curriculum. Students of upper socio-economic levels performed better on social studies and mathematics tests than did those of lower levels

without regard to type of school or program. Students from open-pod and self-contained urban schools exhibited better performance in mathematics than those from urban self-contained schools.

Yore (1974) conducted a study designed to assess the relative effectiveness of two dissimilar instructional programs: a typical reading readiness program, consisting of twenty-two exercises from Scott-Foresman's First Talking Alphabet; and a program of science instruction, consisting of twenty-two units of the AAAS Science: A Process Approach, Part A by Xerox, on the acquisition of reading readiness skills. The sample was comprised of fifty-one students in two kindergarten classes from a school in the center of Victoria, British Columbia, Canada. Students, who were randomly assigned to the two treatment groups, were instructed by the researcher according to the two treatments for thirty minute sessions on two days a week over a ten week period. Pre-tests and post-tests of both the Metropolitan Readiness Test and the Clymer-Barrett Prereading Battery were administered to randomly selected subgroups. A three-way analysis of variance was performed and Yore (1974, 7071-A) reported the following results pertaining to the acquisition of readiness skills by kindergarten children: "Both programs produced similar kinds of achievement. Both

sexes benefited from instruction. Neither program had specific differential effect for a given sex group."

SWRL KINDERGARTEN PROGRAM RESEARCH

In the process of developing a kindergarten program, The Southwest Regional Laboratory for Educational Research has conducted a variety of research studies. The great majority of this research consisted of the product development and improvement type of research to the partial exclusion of comparative studies.

Due to the position of the SWRL staff (SWRL Kindergarten Program Briefing Information, 1972) that comparative studies are almost irrelevant to product development, only one case of a comparative study has apparently been reported. During 1969-70, the SWRL Program was tried out in an unnamed metropolitan school district and an effort was made to compare the results with those of a commercially available basal reading program in what the SWRL staff calls "program-fair testing." Evaluation items were constructed by the SWRL researchers which, they felt, would measure directly the objectives which were congruent between the two programs.

Two separate tests were constructed: one to measure the outcomes of the SWRL Program and the other to measure the basal reading program. Ten children were

selected randomly from each of three SWRL trial classes (N = 30) and ten from each of six basal classes (N = 60). The mean score for the SWRL group's thirty item test was 87 percent; the basal group's, 58 percent. The researchers felt that certain outcomes of both programs were so similar that performance comparisons could be made. Thus the objective of recognizing basic program words was compared: SWRL group responded correctly 96 percent of the items and the basal, 89 percent. In the area of word attack, the SWRL group scored 75 percent and the basal, 31 percent; and in comprehension, SWRL, 63 percent and the basal, 65 percent (SWRL Program Briefing Information, 1972:10-11).

The researchers viewed these results as evidence of the superiority of the SWRL Program. For even in comprehension, which they stated was not a SWRL objective, the SWRL Program group's scores were not significantly different from those of the control group and were superior in all other areas.

The SWRL researchers stated:

> . . . Since the program-fair tests were based on both common and unique program content, they were felt to be more representative than either a standardized test or a test based exclusively on common content for the comparative evaluation of program effectiveness (SWRL Kindergarten Program Briefing Information, 1972:11).

SUMMARY

Recent surveys, which have been made to determine teachers' attitudes toward reading instruction in kindergarten, have found that, despite some resistance, the trend is clearly toward more formal reading instruction in kindergarten.

Currently, early reading instruction has been the topic of numerous research studies. Many of these have been comparative studies seeking to determine the relative superiority of structured programs vs. unstructured programs, formal reading instruction vs. no reading instruction, or one readiness or reading program vs. an alternate program. Longitudinal studies have also been made to study similar questions with the added query of whether the effects were long-term or transitory.

In general, the available research appeared to point to the following conclusions. There appeared to be a significant difference in achievement in favor of children who had been given formal reading instruction and in favor of those who had been instructed using structured reading or readiness programs. These results appeared to be upheld in studies of children from various socio-economic groups, as well as in studies concerned with long-term evaluation. It appeared that children who received early reading instruction maintained their

superiority over those who did not receive instruction, especially if adjustments were made in their subsequent reading programs. The results of studies which attempted to test the superiority of one particular program over another seemed to support the conclusion reached by Bond: "There is no one method so outstanding that it should be used to the exclusion of the others" (Heilman, 1967:119).

Ancillary studies concerning the effects of early reading have been made. No increase in the incidence of problems related to vision, hearing, adjustment, attitude toward reading, or anxiety has been found in children who were given early reading instruction as compared to those who were not.

Other studies, which have examined the need for and the optimum length of readiness periods, have reported conflicting results; however, the researchers were in agreement on the need for further study in this area.

To the best knowledge of the researcher, only one comparative study has been made of the SWRL Kindergarten Program. This study, carried out by the developers of the program, was termed "a program-fair testing" study (SWRL Program Briefing Information, 1972:10). Thus, rather than using an objective standardized measure, tests were specially devised for the

purpose of the study. In the results of this study, the achievement of the children in the SWRL Kindergarten Program was found to be superior to that of the children in basal program.

Chapter 3

EXPERIMENTAL DESIGN OF THE STUDY

METHOD OF SAMPLE SELECTION

Twelve of the twenty schools in Lafayette Parish that had a kindergarten program were selected for this study in June, 1972. Thus approximately 75 percent of all kindergarten children in the public schools of Lafayette Parish, Louisiana were included in the sample. Six of the schools which had kindergartens were eliminated due to their involvement in other types of pilot programs, such as special reading classes and bilingual programs. Two predominately black schools which had only the experimental program were also eliminated because comparable schools were not available to be in the control group. All of the children in the study were assigned to their respective kindergarten classes on a random basis as they registered for kindergarten.

Of the twelve schools participating in this study, five schools had both experimental and control groups. Data from these five schools were compiled, tabulated, and analyzed both separately and as a part of the total group to compare with and corroborate the results of the total studied population.

Due to population fluctuations and normal changes which took place within the selected schools, equalization of numbers of participants could not be achieved. A total of 20 teachers and 645 children took part in the completed study. The data presented in Table 1 showed the attrition of students from the pre-test to post-test. The 16.6 percent loss represented the students who moved during the treatment period, as well as those who were absent during the testing period due to illness and early family vacations.

Pertinent data concerning the kindergarten population were obtained from information sheets filled out by the individual classroom teachers from the official records of Lafayette Parish. A copy of this Information Sheet can be found in Appendix B. The numbers of students, teachers, classes, and schools which comprised the experimental and control groups are shown in Table 2.

In Table 3, these populations are further identified by race, sex, place of residence, numbers pre-tested, pupil-teacher ratio, father's years of education, and the means of pre-test scores.

ADMINISTRATION OF THE PRE-TEST

Due to the large size of the sample population and the control given the researcher in the initial stages

Table 1

Number of Students in Study Dropped from Pre-test to Post-test

Program	Number Pre-tested	Number Post-tested	Number Dropped	Percentage Dropped
Experimental	457	379	78	17.0
Control	316	266	50	15.8
Total	773	645	128	16.6

Table 2

Population of Experimental and Control Groups by Numbers of Schools, Teachers, Classes, and Students

	Experimental	Control	Total
Schools	3 (5*)	4 (5*)	12
Teachers	11	9	20
Classes	22	18	40
Students	379	266	645

*Schools having both experimental and control programs.

Table 3

Composition of Experimental and Control Groups by Race, Sex, Place of Residence, Number Pre-tested, Pupil-Teacher Ratio, Father's Years of Education, and Pre-test Scores

Variable	Experimental	Control	Total
Total Population	379	266	645
White	348	254	602
Black	31	12	43
Male	183	136	319
Female	196	130	326
Rural	155	58	213
Urban	224	208	432
Number Pre-tested	194	133	327
Pupil-Teacher Ratio (Mean)	1:23	1:21	1:22
Father's Years of Education (Mean)	12.36	12.74	12.52
Pre-test Score (Mean)	30.24	31.41	30.72

of this study, several experimental procedures were performed. The Boehm Test of Basic Concepts, Form A was administered to one-half of the students in the experimental and control groups in September, 1972. This arrangement made it possible to examine the data using different experimental designs within this study. Of particular importance was the Solomon Four-Group design of pre-testing and post-testing which allowed the researcher to examine possible influence of the pre-test on the later performance of the kindergarten children. Since only one-half of each of the two groups was pre-tested, it was possible to recognize any advantage or bias due to the effect of test practice. A further explanation of this design was given by Campbell and Stanley (1963:24-25):

> . . . the Solomon (1949) Four-Group Design, deservedly has higher prestige and represents the first explicit consideration of external validity factors. . . . By paralleling Design 4 [The Pre-test-Post-test Control Group Design] elements with experimental and control groups lacking the pre-test, both the main effects of testing and the interaction of testing and X [the treatment] are determinable.

This design has been further represented graphically by Campbell and Stanley (1963:24) in this way:

R	O_1	X	O_2
R	O_3		O_4
R		X	O_5
R			O_6

In this study, the X represented the exposure of the group to the experimental treatment; the O referred to the tests given: O_1 and O_3 were pre-tests, O_2, O_4, O_5, O_6 were post-tests; the R indicated random assignment to the treatment group.

Although random assignment was employed, a further assurance of group comparability was desired because of possible variations within the two groups. Thus from other possible experimental designs, a pre-test, post-test control group design using pre-test scores and father's years of education as covariables was selected as the most effective and truest measure of differences in achievement.

Those classes to be pre-tested were selected on a random basis, stratified by morning and afternoon sessions, in a manner which enabled one-half of the morning and one-half of the afternoon sections to be included in the pre-test sample. Thus each teacher had either a morning or an afternoon class which was pre-tested. Data presented in Table 4 reveal the composition of the pre-tested group according to race, sex, place of residence, session, and father's years of education. From the data of this group, the major analyses of this study were made.

The pre-test, the Boehm Test of Basic Concepts, Form A, is a two-part test, designed for kindergarten

Table 4

Composition of Pre-test Sample by Program, Race, Sex, Place of Residence, Session, and Father's Years of Education

	Experimental	Control	Total
Total Population	194	133	327
White	177	127	304
Black	17	6	23
Male	96	66	162
Female	98	67	165
Rural	91	15	106
Urban	103	118	221
Morning Session	110	73	183
Afternoon Session	84	60	144
Father's Years of Education (Mean)	11.99	12.84	12.34

through second grade children with the purpose as stated by Boehm (1972:4):

> . . . to assess beginning school children's knowledge of frequently used basic concepts widely, but sometimes mistakenly assumed to be familiar to children at their time of entry into kindergarten or first grade.

Thus, not an intelligence test, it was designed to assess the child's understanding of space, time, and quantity. It was chosen specifically for this study on the basis of: (1) its clear, concise directions which, according to Smock (Buros, 1972:627) could be "easily administered by aides or paraprofessional persons"; (2) its reliability (Buros, 1972); and (3) the fact that it could be administered to kindergarten age children in small groups of eight to twelve (Boehm, 1972). It appeared to this researcher from reviews and critiques in Buros' Seventh Mental Measurement Yearbook and personal examination of many tests, that it was the best group test available at that time to assess a child's knowledge of basic concepts and which would help to establish a base line for both the experimental and control groups.

The pre-test was given in two sittings to all selected classes on September 7 and 8, 1972. As advised by the author (Boehm, 1972:4) the tests were given to no more than eight to ten children per group. The classroom teachers were asked to give the tests to their own classes so as to make testing conditions as favorable and natural

as possible. Prior to testing, a meeting was held in which the researcher discussed testing procedures, principles, and precautions with the teachers. These precautions and procedures were distributed to each teacher in written form in a handout entitled "Guidelines for the Administration of the Boehm Test". A copy of this handout has been placed in Appendix C. Provisions were made with the help of the supervisor and principals of the selected schools to enable the teachers to test small groups of children while the rest of the class was taken from the room by older children, parents, or aides. Upon completion of the testing, the tests were collected and hand-scored by the researcher.

THE ACADEMIC YEAR

The kindergarten classes proceeded normally with their assigned treatments in accordance with their respective and varied teacher's manuals and curriculum guides during the ensuing school year, independent of the researcher.

ADMINISTRATION OF THE POST-TESTS

Two post-tests were chosen to provide a more comprehensive test of the various aspects of readiness. The Clymer-Barrett Prereading Battery, as well as the Boehm Test of Basic Concepts, Form B, were given to

the entire population of both experimental and control groups.

The Clymer-Barrett Prereading Battery is a readiness test designed for use in late kindergarten or early to middle first grade to evaluate pupil's pre-reading skills and abilities. It contains two subtests in each of the following areas: Visual Discrimination, Auditory Discrimination, and Visual Motor Skills and can be administered in three thirty-minute periods. It was chosen partially on the basis of the critiques in the Seventh Mental Measurement Yearbook (Buros, 1972:1155), in which it was stated by Farr: "Two major strengths of the test include the very clear and concise directions for test administration and the total test reliability." Another of the critiques by Smith (Buros, 1972:1156) continued to discuss the fact that the Clymer-Barrett Prereading Battery is " . . . probably better than most [other readiness tests]." Furthermore, Johnson (1967) through a research study has shown the Clymer-Barrett Prereading Battery to have greater predictive validity than the Metropolitan Readiness Test, which has long been acknowledged as one of the better readiness tests (Buros, 1972). Thus its two strengths fit the purposes of the study: its ease of administration and its predictive validity.

Following procedures similar to those used with the pre-test, the two post-tests were given by the classroom teachers. A meeting again was held prior to the testing. Procedures and specific test directions were given orally and in written form by the researcher. The handout, "Guidelines for Final Testing," has been placed in Appendix D. The tests were given at the beginning of each session to small groups of eight to ten children in five separate sittings on May 16, 17, 21, 22, and 23, 1973. Each sitting lasted approximately thirty minutes. The completed tests were collected and hand-scored by the researcher.

TREATMENT OF DATA

All data were compiled, coded, and transferred to IBM code sheets by the researcher and punched on computer cards. Least squares analysis of covariance which took into account the disproportionality of the numbers of observations in various groups (i.e., race, sex, etc.) as well as the relationship between response variables (readiness test scores) and continuous variables (i.e., father's years of education and pre-test scores) was utilized. This type of analysis insured that differences in numbers of observations between the experimental and control group would not be biased due to the over-representation of some sub-grouping and also adjusted

all subjects to an equal father's education and Boehm Pre-test score.

Analyses of the pre-test and post-test scores were initially made to examine the possibility of practice effect of the pre-test on subsequent test scores. This was done by comparing the post-test scores of those who were pre-tested with those who were not pre-tested in order to determine if any significant differences existed.

Separate analyses were made of data from the total population of twelve schools and from the five schools which had both experimental and control groups within their programs. The five schools having both programs were handled as a replication of the study, a sub-experiment within the research design as suggested by Mouly (1963:337) to this end:

> No matter how carefully one attempts to control all the factors that might influence the results on the basis of which the operation of the independent variable is to be appraised, nor how randomly the methods and the subjects are assigned to the experimental and control groups, slight discrepancies invariably remain. They are taken care of through the replication of the study which in essence is a matter of conducting a number of sub-experiments within the framework of an overall experimental design.

Chapter 4

PRESENTATION AND ANALYSES OF DATA

This chapter has been organized into three major divisions in order to more clearly answer the questions presented in Chapter 1. The first section deals with the preliminary question of the possible effect of the administration of a pre-test on subsequent post-test scores. In the second section of this chapter, data have been examined and analyses made to attempt to answer the main question: Is there a significant difference between the readiness scores of students in the experimental and control groups? Concluding this chapter, data on the whole population have been analyzed to address the question: Is there a significant difference between the readiness scores of students in the total sample classified according to session, birth order, father's educational level, sex, pre-school attendance, place of residence, and French spoken in the home?

ANALYSIS OF DATA ON EFFECT OF PRE-TEST ON POST-TEST SCORES

The major portion of this study which compared pre-test and post-test readiness scores of students in

an experimental and a control group posed problems for the researcher due to the age of the children to be tested. Finding a test which could be feasibly given to a large sample of children at the beginning and end of kindergarten was a difficulty. The final choice of the Boehm Test of Basic Concepts, Form A was made partially on the fact that it was a test with format, directions, time required, and concepts included which appeared appropriate to the young age of those to be examined.

Another problem concerned the possible effect which the pre-test might have upon the post-test scores. Since the students in the sample had never been exposed to a prior testing experience, the possible effect of test practice had to be considered. An experimental check was incorporated into the actual design of the study: the Solomon Four-Group design of pre- and post-testing which was discussed previously. Instead of pre-testing all 664 students in the sample, approximately one-half of the students were pre-tested. This pre-tested sample of 327 was chosen from both the experimental and control groups. Thus it was possible to compare the post-test scores of those who were pre-tested with the scores of those who were not pre-tested. In this way any significant difference, some certainly due to the pre-test practice effect, could be detected.

The results of this 2 x 2 factorial analysis of covariance are shown in Tables 5, 6, and 7. There were no significant differences in test scores on the Boehm Test of Basic Concepts, Form B, or the Clymer-Barrett Prereading Battery between students who had been pre-tested and those who had not, as seen in Tables 5 and 6. The means of 40.19 on the Boehm post-test for those who did not take the pre-test and of 40.46 for those who did; and of 79.13 on the Clymer-Barrett for those who did not take the pre-test and of 78.52 for those who did, are found in Table 7.

Similarly, the data from Tables 5 and 6 indicated that there were no significant differences in the interactions between program and pre-test given. The scores of those who were pre-tested and those who were not pre-tested were not significantly different for either the experimental or the control group. Thus, the pre-test did not affect either the experimental or control group scores to a greater extent. The only significant difference found in the data of Tables 5 and 6 were between the programs themselves. This difference has been discussed extensively in the next section and thus was not treated here.

As a further check on the preceding results, the data for the five schools having both experimental and control groups were analyzed separately. These data have

Table 5

Analysis of Variance for All Students on Post-test, Boehm Test of Basic Concepts, Form B for Pre-test Effect

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
Program	1	189.06	4.60*
Pre-test Given	1	11.93	0.29
Pre-test Given x Program	1	75.85	0.17
Error	660	27097.60	--

*Significant at .05 level.

Table 6

Analysis of Variance for All Students on Post-test, Clymer-Barrett Prereading Battery for Pre-test Effect

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
Program	1	10058.51	17.16**
Pre-test Given	1	58.05	0.10
Pre-test Given x Program	1	39.89	0.07
Error	660	386790.15	--

**Significant at .01 level.

Table 7

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B for All Students Classified According to Pre-test Given

Pre-test	N	Boehm Post-test	Clymer-Barrett
Not given	327	40.19	79.13
Given	337	40.46	78.52
Total	664	40.33	78.82

been tabulated and placed in Appendix A for reference and simplification since they are not part of the main analyses. No significant differences were found on either test between the scores of those who had been given the pre-test and those who had not as shown in Table 34 and 35. Nor were there any significant differences between interactions of program with the pre-test. The means table also has been placed in the Appendix and labelled Table 36.

The above analyses of the possible relationship of the pre-test to the post-test scores, which were not significant, allowed the researcher to rule out the possibility of potential bias due to practice effect.

ANALYSIS OF DATA FOR EXPERIMENTAL AND CONTROL GROUPS

In this section of the study, data pertaining to the comparison of achievement of students in the experimental and control groups are presented. Randomization was used to obtain two groups which could be considered statistically comparable. However, since the pre-test scores and fathers' years of education were considered to be related to post-test performance, a pre-test, post-test control group design using the pre-test scores and father's years of education as covariables was chosen. Data shown in Table 8 later confirmed that this assumed

relationship was indeed highly significant. Thus, the analysis of covariance was used to adjust the means of the post-test scores for initial differences associated with the two continuous variables: pre-test scores and father's years of education. The least squares technique was used to adjust the means for disproportionate numbers in the various classifications (program, race, etc.). The major analyses were based upon the readiness scores of the 327 students who had been pre-tested. The five school replication study was also based upon the scores of pre-tested students using the covariables of pre-test score and father's years of education.

Differences in the readiness test scores and the various interactions studied were tested to determine if the differences could be attributed to chance. Thus, the differences were submitted to tests of significance at the .05 and .01 levels.

The experimental and control groups were further subgrouped in order to fully answer the questions asked in Chapter 1. The subgroups within both the experimental and control groups were: session (morning, afternoon), race (black, white), sex (male, female), preschool attendance (yes, no), French spoken in home (yes, no), place of residence (rural, urban), and birth order (older one-half, younger one-half).

Data for the Boehm Test of Basic Concepts

Table 8 contains the data resulting from the analysis of covariance computations for the Boehm Test of Basic Concepts, Form B. The overall effect of the two programs on the readiness scores of the experimental and control groups was examined first. The data presented in Table 8 showed a significant difference, at the .05 level of significance, between the students in the experimental and control groups. The total program means found in Table 9 indicated that students in the experimental group scored significantly higher than those in the control group on the Boehm Test of Basic Concepts. The mean of the experimental group was 40.46, while the control group mean was 37.92, a difference of 2.54.

A further perusal of Table 8 indicated that no significant differences on the Boehm Test of Basic Concepts, Form B were found in the main study in the interactions between the scores of the experimental and control groups and the following variables: session, birth, race, sex, preschool attendance, place of residence, or French spoken in the home.

Thus, after examining the means tables for the disparity between the differences in the scores of the students in the morning or the afternoon sessions of the experimental vs. the morning or afternoon sessions of the

Table 8

Analysis of Variance for Pre-tested Students on Boehm Test of Basic Concepts, Form B

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
Program	1	92.71	4.80*
Session	1	67.73	3.50
Race	1	52.01	2.69
Sex	1	11.38	0.59
Preschool	1	33.78	1.75
French	1	21.92	1.13
Rural	1	76.77	3.97*
Birth Order	1	6.06	0.31
Program x Session	1	31.81	1.65
Program x Birth Order	1	47.23	2.44
Program x Race	1	48.02	0.93
Program x Sex	1	11.57	0.60
Program x Preschool	1	24.03	1.24
Program x Rural	1	7.17	0.37
Program x French	1	1.98	0.10
Boehm Pre-test (covariable)	1	2752.81	142.38**
Father's Years of Education (covariable)	1	255.00	13.19**
Error	309	5974.42	--

*Significant at .05 level.

**Significant at .01 level.

Table 9

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program

Program	N	Boehm Post-test
Experimental	194	40.46
Control	133	37.92
Total Program	327	39.43

control group as shown in Table 10 and noting that the interaction was not significant, it was determined that the programs were not significantly more effective for the morning sessions than for the afternoon sessions. That there was a significant difference between the scores of the experimental and control groups has already been noted; thus it appeared that the differences between morning experimental vs. morning control were due mainly to program effect rather than to the interaction between program and session. Further, there was no significant difference either between the differences in the scores of the morning experimental and afternoon experimental or of the morning control and afternoon control group.

Data on the rest of the interactions were found to be similarly not significant. From the data in Table 8 which showed that none of the interactions were significant and in Tables 11 through 16 which indicated the means for the various interactions with program, the following results were determined. There was no significant disparity between the differences in readiness scores on the Boehm Test of Basic Concepts, Form B either of younger and older students in the experimental group or younger and older students in the control (Table 11); of white and black students in experimental or white and black students in the control (Table 12); of boys and

Table 10

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program and Session

Session	Program		Total Session
	Experimental	Control	
Morning	40.62	38.77	39.69
Afternoon	40.30	37.08	38.69
Total Program	40.46	37.92	--

Table 11

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program and Birth Order

Birth Order	Program		Total Birth Order
	Experimental	Control	
Younger one-half	39.92	38.18	39.05
Older one-half	41.01	37.67	39.34
Total Program	40.46	37.92	--

Table 12

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program and Race

Race	Program		Total Race
	Experimental	Control	
White	40.90	39.47	40.19
Black	40.02	36.37	38.20
Total Program	40.46	37.92	--

Table 13

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program and Sex

Sex	Program		Total Sex
	Experimental	Control	
Male	40.46	38.31	39.39
Female	40.46	37.53	39.00
Total Program	40.46	37.92	--

Table 14

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program and Attendance or Non-Attendance of Preschool

Preschool	Program		Total Preschool
	Experimental	Control	
Attendance	40.52	38.61	39.57
Non-Attendance	40.40	37.23	38.82
Total Preschool	40.46	37.92	--

Table 15

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Place of Residence and Program

Place of Residence	Program		Total Place of Residence
	Experimental	Control	
Rural	39.94	36.95	38.45
Urban	40.98	38.89	39.94
Total Program	40.46	37.92	--

Table 16

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Program and Whether or Not French Is Spoken in the Home

French	Program		Total French
	Experimental	Control	
Spoken	40.26	37.55	38.91
Not Spoken	40.66	38.28	39.47
Total Program	40.46	37.92	--

girls in the experimental or boys and girls in the control (Table 13); of those who attended preschool in the experimental and those who did not or those who attended preschool in the control and those who did not (Table 14); of rural and urban students in the experimental or rural and urban students in the control (Table 15); or of students from French speaking homes and non-French speaking homes in the experimental or students from French speaking homes and non-French speaking homes in the control (Table 16). Thus neither program was found to be significantly more effective for any of the student subgroups: morning or afternoon, older or younger, white or black, boys or girls, those who attended preschool or those who did not, rural or urban, and those from French speaking homes or those from non-French speaking homes. In addition, the lack of significance of these interactions suggested that the differences noted between subgroups of each program were due primarily to the significant program difference as discussed previously.

Data for the Clymer-Barrett Prereading Battery

Data from Table 17 show the analysis of covariance for the scores from the Clymer-Barrett Prereading Battery of the students in the experimental and control groups. In examining the over-all program effect, a significant

Table 17

Analysis of Variance for Pre-tested Students on Clymer-Barrett Prereading Battery

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
Program	1	2227.19	8.88**
Session	1	254.59	1.06
Race	1	903.96	3.60*
Sex	1	1493.84	5.96**
Preschool	1	768.65	3.07
French	1	1039.27	4.14*
Rural	1	379.38	1.51
Birth Order	1	8.57	0.03
Program x Session	1	658.54	2.63
Program x Birth Order	1	1037.01	4.14*
Program x Race	1	15.23	0.06
Program x Sex	1	129.10	0.51
Program x Preschool	1	44.93	0.18
Program x Rural	1	315.38	1.26
Program x French	1	34.86	0.14
Boehm Pre-test (covariable)	1	43006.00	171.50**
Father's Years of Education (covariable)	1	3473.79	13.85**
Error	309	77485.24	

*Significant at .05 level.
**Significant at .01 level.

difference was noted at the .01 level with an F-ratio of 8.88. A comparison of the program means found in Table 18 revealed a difference of 12.44 units in favor of the experimental group on the total Clymer-Barrett score. The experimental group had a mean of 78.69, while the control group averaged 66.25.

An examination of the data in Table 17 revealed only one significant interaction, that of program by birth order. This interaction, which was significant at the .05 level, was looked at in two ways. The first relationship studied was that of younger students in the experimental vs. younger students in the control and older students in the experimental vs. older students in the control. The mean scores on the Clymer-Barrett shown in Table 19 were 76.65 for the younger experimental group and 67.94 for the younger control, a difference of 8.71; and 80.73 for the older experimental and 64.55 for the older control, a difference of 16.18. After comparing the differences between younger and older students scores, it was evident that although the overall effects of program were significant in favor of the total experimental program, the experimental program was more effective for the older students than it was for the younger students when compared to the control program. This appeared to be at least in part due to the extremely low scores of the older students in the control group.

Table 18

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program

Program	N	Clymer-Barrett
Experimental	194	78.69
Control	133	66.25
Total	327	73.63

Table 19

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program and Birth Order

Birth Order	Program		Total Birth Order
	Experimental	Control	
Younger one-half	76.65	67.94	72.30
Older one-half	80.73	64.55	72.64
Total Program	78.69	66.25	--

The interaction discussed above had other significant ramifications. In Table 17, differences at the .05 level of significance were found in the test scores in the Clymer-Barrett between older students and younger students in the experimental group and older and younger students in the control group. The mean test scores found in Table 19 were 76.65 for the younger experimental students and 80.73 for the older experimental students, a difference of 4.08. The achievement of the older students in the experimental group was significantly greater than the achievement of the younger. It appeared that the experimental program was significantly more effective, based on Clymer-Barrett test scores, for older students than for younger ones. Conversely, however, the mean test scores for the control group of 67.94 for the older and 64.55 for the younger students showed a significant difference in favor of the younger group. Based on Clymer-Barrett test scores, it appeared that the control group program was more productive for the younger students.

The remaining interactions between program and session, program and race, program and sex, program and preschool attendance, program and place of residence, program and French spoken in the home were all shown in the data in Table 17 to be not significant. The means tables for these interactions were labeled Tables 20

through 25. The results of these interactions were studied and the following summary statements made: There was no significant disparity between the differences in readiness scores on the Clymer-Barrett Prereading Battery either of morning and afternoon in the experimental and morning and afternoon in the control (Table 20); of white and black in the experimental and white and black in the control (Table 21); of boys and girls in the experimental and boys and girls in the control (Table 22); of those who attended and those who did not attend preschool in the experimental and those who attended and those who did not attend preschool in the control (Table 23); of rural and urban students in the experimental and rural and urban students in the control (Table 24); or of students from French-speaking homes and non-French speaking homes in the experimental and French-speaking and non-French speaking in the control group (Table 25). It was thus determined that neither program was significantly more effective for any one of the following pairs of subgroupings: morning vs. afternoon, black vs. white; boys vs. girls; preschool attendance vs. non-attendance; rural vs. urban; and French spoken in the home and French not spoken in the home.

Data for the Five Schools

The results of the data for the five schools in the replication study for the Boehm Test of Basic

Table 20

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program and Session

Session	Program		Total Session
	Experimental	Control	
Morning	78.11	68.78	73.44
Afternoon	79.28	63.72	71.50
Total Program	78.69	66.25	--

Table 21

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program and Race

Race	Program		Total Race
	Experimental	Control	
White	83.35	69.88	76.62
Black	74.03	62.61	68.32
Total Program	78.69	66.25	--

Table 22

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program and Sex

Sex	Program		Total Sex
	Experimental	Control	
Male	77.10	63.35	70.23
Female	80.28	69.14	74.71
Total Program	78.69	66.25	--

Table 23

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program and Attendance or Non-Attendance of Preschool

Preschool	Program		Total Preschool
	Experimental	Control	
Attendance	77.33	64.02	70.67
Non-Attendance	80.05	68.48	74.26
Total Preschool	78.69	66.25	--

Table 24

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Place of Residence and Program

Place of Residence	Program		Total Place of Residence
	Experimental	Control	
Rural	78.51	63.12	70.81
Urban	78.87	69.38	74.13
Total Program	78.69	66.25	--

Table 25

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Program and Whether or Not French Is Spoken in the Home

French	Program		Total French
	Experimental	Control	
Spoken	77.10	63.95	70.53
Not Spoken	80.28	68.54	74.41
Total Program	78.69	66.25	--

Concepts, Form B corroborated the major findings of the main study. In Table 48 the data revealed that as found in the main study there was a difference at the .01 level of significance between the scores of the students in the experimental and control groups. A study of total program means found in Table 49 showed that the significant difference was in favor of the experimental group with its mean of 42.85 with the control group having a mean score of 37.29.

The data on interactions between program and other variables found in Table 48 were in agreement with the main study with one variation. Differences significant at the .05 level were noted only in the five school data when comparing the achievement of students by program and race on the Boehm post-test. However, due to the extremely low numbers of black students in the five school sample (two in the experimental group and three in the control), it was felt that further discussion of this aspect was unwarranted. The remaining interactions were found to be not significant in accordance with the main study's findings. The means tables for these interactions have been placed in Tables 50 through 56.

The data for the Clymer-Barrett scores in Table 57 showed similar corroborating results. Significant differences were also found on the Clymer-Barrett for the

students in the five schools in favor of the experimental group. Data from Table 49 revealed that the difference between the readiness scores of 85.00 for the experimental and 69.09 for the control was significant at the .05 level.

Data for the five schools in the replication shown in Table 57 revealed no significant differences on the Clymer-Barrett for any of the interactions tested. This was in agreement with the data for the twelve schools shown in Table 17 with the exception of the interaction between program and birth order which the major study found to be significant. Data found in Tables 57 through 64 indicated that no significant differences were found in the interactions between program and session, program and birth order, program and race, program and sex, program and preschool, program and place of birth, and program and French spoken in the home.

The complete data for the five schools have been placed in Appendix A.

ANALYSIS OF DATA FOR TOTAL PRE-TESTED GROUP

In this section of the study, data pertaining to the entire group of pre-tested kindergarten children (including experimental and control groups) were examined to determine if there was a significant relationship

between achievement and any of the following variables: session, race, sex, preschool attendance, French spoken in the home, place of residence, or birth order as measured by readiness scores.

In order to adequately answer the questions set forth in Chapter 1, it was necessary for the purpose of analysis to divide the group into subgroups according to session (morning, afternoon); race (black, white); sex (male, female); preschool attendance (yes, no); French spoken in home (yes, no); place of residence (rural, urban); and birth order (older one-half, younger one-half).

Data for Boehm Test of Basic Concepts

Data presented in Table 26 revealed that after the means were adjusted by the covariables, there were no significant differences found in scores on the Boehm Test of Basic Concepts, Form B of students classified according to any of the following variables: session, race, sex, preschool attendance, French spoken in the home, or birth order. These data indicate that there was no significant difference between scores of morning vs. afternoon, white vs. black, boys vs. girls, attendance vs. non-attendance of preschool, French speaking vs. non-French speaking, and older vs. younger students. This is not to say that raw score differences in the test scores between subgroupings did not occur; however,

Table 26

Analysis of Variance for Pre-tested Students on Boehm Test of Basic Concepts, Form 3 for Main Effects

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
Program	1	92.71	4.80*
Session	1	67.73	3.50
Race	1	52.01	2.69
Sex	1	11.38	0.59
Preschool	1	33.78	1.75
French Spoken	1	21.92	1.13
Rural/Urban	1	76.77	3.97*
Birth Order	1	6.06	0.31

*Significant at .05 level.

when adjustments were made to take into account disproportionate numbers and relationships between scores and such continuous variables as father's years of education and pre-test scores, the differences in scores on this post-test between students classified according to the above variables were not significant. Tables 27 through 32 show the means for students classified according to session (Table 27), race (Table 28), sex (Table 29), preschool attendance (Table 30), French spoken in the home (Table 31), and birth order (Table 32).

Significantly different test scores, however, were realized for father's years of education, pre-test scores, and students classified according to place of residence as revealed by the data in Table 26 for the total group.

Data from Table 26 revealed that there was a relationship significant at the .01 level between father's years of education and test scores on the Boehm Test of Basic Concepts, Form B. The data in Table 33 showed the change in the Boehm post-test score which was associated with father's years of education. The partial regression coefficient of 0.33 for the Boehm post-test indicated that for each increase of a year in father's years of education, there was a positive and significant increase of 0.33 units on the Boehm post-test. Figure 1 further illustrates this significant

Table 27

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Session

Session	N	Boehm Post-test
Morning	183	39.69
Afternoon	144	38.69
Total	327	39.25

Table 28

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Race

Race	N	Boehm Post-test
White	304	40.19
Black	23	38.20
Total	327	40.05

Table 29

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Sex

Sex	N	Boehm Post-test
Male	162	39.39
Female	165	39.00
Total	327	39.19

Table 30

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Attendance or Non-Attendance of Preschool

Preschool	N	Boehm Post-test
Attendance	96	39.57
Non-attendance	231	38.82
Total	327	39.04

Table 31

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Whether or Not French Is Spoken in the Home

French	N	Boehm Post-test
Spoken	144	38.91
Not Spoken	183	39.47
Total	327	39.22

Table 32

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Birth Order

Birth Order	N	Boehm Post-test
Younger one-half	180	39.05
Older one-half	147	39.34
Total	327	39.18

relationship between test scores on the Boehm Test of Basic Concepts, Form B and father's years of education.

Similar findings, also significant at the .01 level, were revealed in Table 34 when examining the relationship between the scores on the Boehm pre-test and the Boehm post-test. There was a significant and positive increase of 0.41 units on the Boehm post-test for each increase of a unit on the Boehm pre-test. These data are presented graphically in Figure 2.

Scores of students classified according to place of residence were significant at the .05 level of confidence according to data in Table 26. Data given in Table 35 indicated that students living in urban areas scored slightly, but significantly higher on the Boehm Test of Basic Concepts, Form B (39.94) than students living in rural areas (38.45).

Data for the Clymer-Barrett Prereading Battery

The data found in Table 36 disclosed that some significant differences existed between readiness scores on the Clymer-Barrett Prereading Battery for students classified according to race, sex, and French spoken in the home, as well as for the continuous variables of father's years of education, and pre-test scores.

A significant difference was found when testing achievement by race. The mean achievement of students

Table 33

Change in Boehm Test of Basic Concepts, Form B Scores Associated with Father's Years of Education for All Pre-tested Students

Partial Regression Coefficient	0.33

Table 34

Change in Boehm Test of Basic Concepts, Form B Scores Associated with Boehm Pre-test Score for All Pre-tested Students

Partial Regression Coefficient	0.41

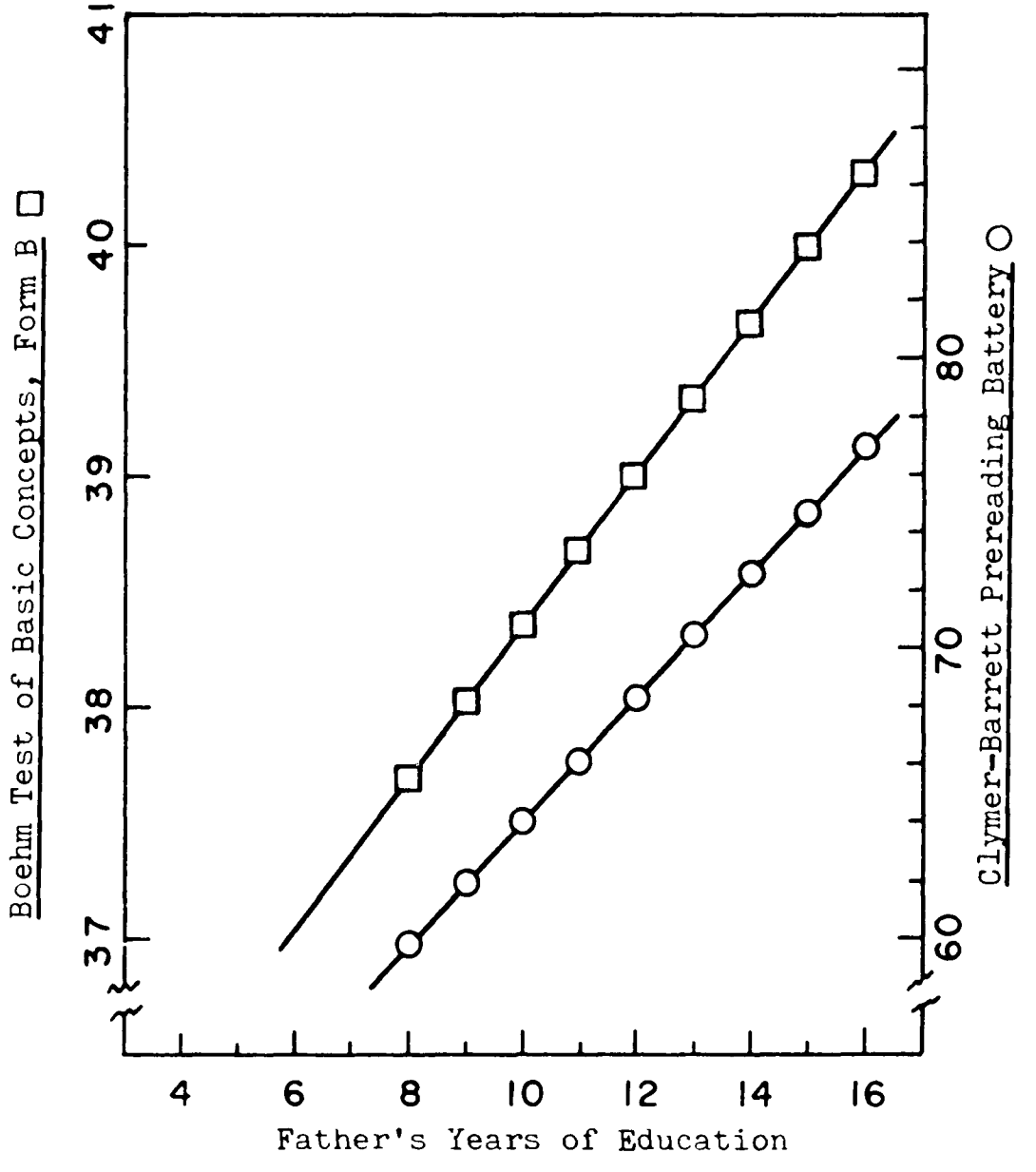

Figure 1

Relationship of Father's Years of Education and Readiness Test Scores to Scores on Boehm Test of Basic Concepts, Form B and Clymer-Barrett Prereading Battery

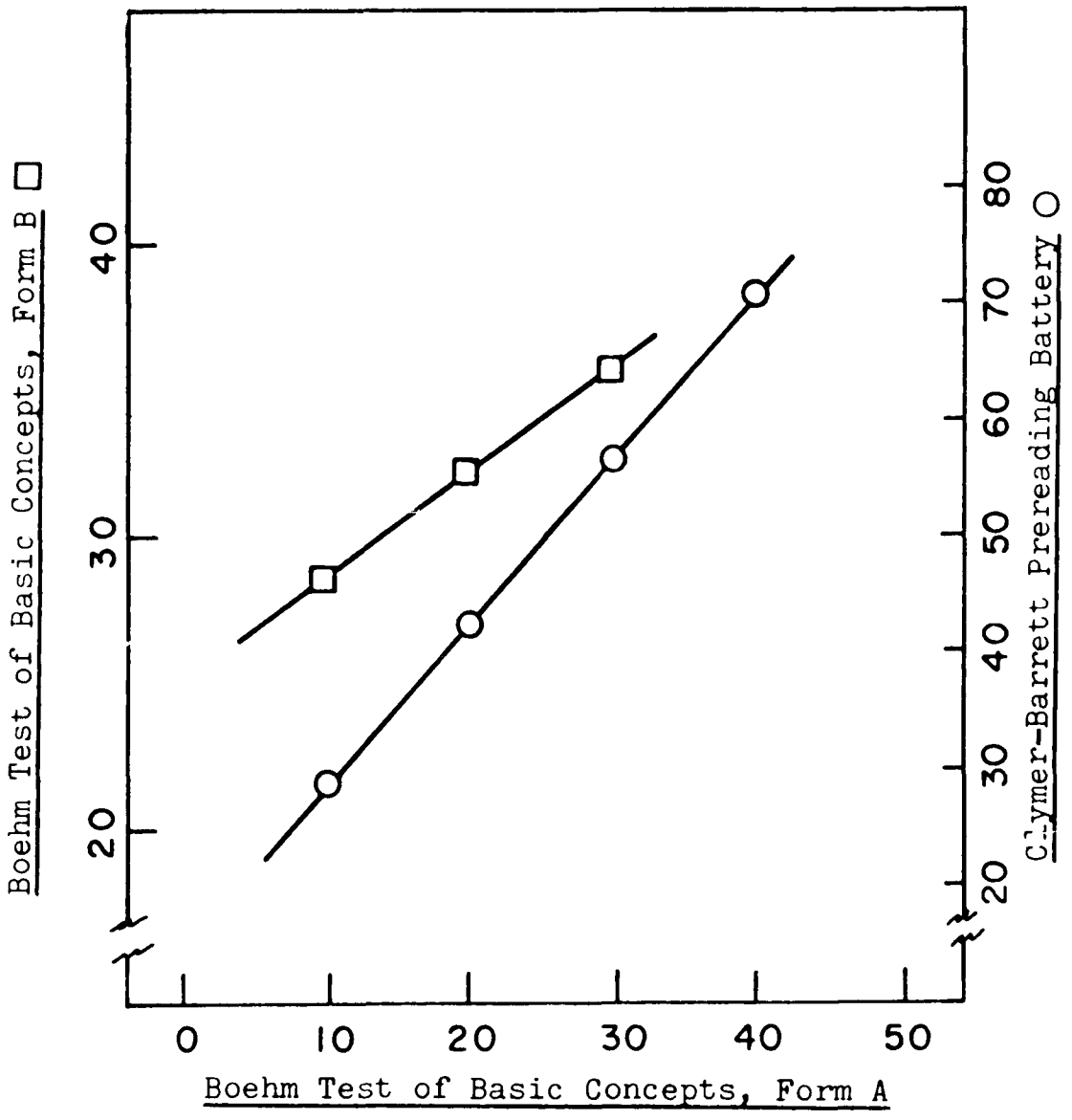

Figure 2

Relationship of Pre-test Scores on Boehm Test of Basic Concepts, Form A to Post-test Scores on Boehm Test of Basic Concepts, Form B and the Clymer-Barrett Prereading Battery

Table 35

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Pre-tested Students Classified According to Place of Residence

Place of Residence	N	Boehm Post-test
Rural	106	38.45
Urban	221	39.94
Total	327	39.46

Table 36

Analysis of Variance for Pre-tested Students on Clymer-Barrett Prereading Battery for Main Effects

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
Program	1	2227.19	8.88**
Session	1	254.59	1.06
Race	1	903.96	3.60*
Sex	1	1493.84	5.96**
Preschool	1	768.65	3.07
French	1	1039.27	4.14*
Rural/Urban	1	379.38	1.51
Birth Order	1	8.57	0.03

*Significant at .05 level.

**Significant at .01 level.

by race is presented in Table 37. The mean achievement of white students was 76.62, while the average for blacks was 68.32. The difference of 8.30 was significant at the .05 level of confidence. However, the low number of black students in the population must be noted. Care must be taken in generalizing and making interpretations concerned with racial differences from these data due to the limited black population.

The data from Table 36 revealed a highly significant difference when testing achievement by sex. There was a difference of 4.48 between boys and girls in favor of the girls. These data were disclosed in Table 38. The F-ratio of 5.96 indicated that the difference was significant at the .01 level of confidence.

The effect of French being spoken in the home on readiness scores was tested and found significant at the .05 level. Data presented in Table 31 indicated that the mean for students from homes in which French was spoken was 70.53 on the Clymer-Barrett, while the average for students from homes in which French was not spoken is 74.41. The significant difference of 3.88 was in favor of the students from homes in which French was not spoken.

Again, the covariable of father's years of education had a highly significant relationship to the test scores of students on the Clymer-Barrett. The data

Table 37

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Race

Race	N	Clymer-Barrett
White	304	76.62
Black	23	68.32
Total	327	76.04

Table 38

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Sex

Sex	N	Clymer-Barrett
Male	162	70.23
Female	165	74.71
Total	327	72.49

in Table 39 revealed the relationship of father's education to the post-test scores. The partial regression coefficient of 1.23 indicated that a positive and significant increase of 1.23 units occurred for the total group on the Clymer-Barrett for each year's increase of father's education. This relationship is shown graphically in Figure 1.

Very similar findings were revealed in Table 40 which showed the highly significant relationship between the pre-test scores and the post-test Clymer-Barrett scores. The partial regression coefficient of 1.63 indicated that for every increase of a unit on the Boehm pre-test, there was an increase of 1.63 on the Clymer-Barrett Prereading Battery. Figure 2 illustrates this relationship.

Data found in Table 36 further revealed that there were no significant differences between the scores on the Clymer-Barrett and the remaining variables that were tested. Tables 41 through 45 show the means of the following variables for which no significant differences were found: session (Table 41); preschool attendance (Table 42); French spoken in the home (Table 43); birth order (Table 44); and place of residence (Table 45).

Data from the Five Schools

The data from the five school study were examined and found to confirm the preceding analyses for the total

Table 39

Change in Clymer-Barrett Prereading Battery Scores Associated with Father's Years of Education for All Pre-tested Students

Partial Regression Coefficient	1.23

Table 40

Change in Clymer-Barrett Prereading Battery Scores Associated with Boehm Pre-test Scores for All Pre-tested Students

Partial Regression Coefficient	1.63

Table 41

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Session

Session	N	Clymer-Barrett
Morning	183	73.44
Afternoon	144	71.50
Total	327	72.59

Table 42

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Attendance or Non-Attendance of Preschool

Preschool	N	Clymer-Barrett
Attendance	96	70.67
Non-attendance	231	74.26
Total	327	73.21

Table 43

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Whether or Not French Is Spoken in the Home

French	N	Clymer-Barrett
Spoken	144	70.53
Not Spoken	183	74.41
Total	327	72.70

Table 44

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Birth Order

Birth Order	N	Clymer-Barrett
Younger one-half	180	72.30
Older one-half	147	72.64
Total	327	72.45

Table 45

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery of Pre-tested Students Classified According to Place of Residence

Place of Residence	N	Clymer-Barrett
Rural	106	70.81
Urban	221	74.13
Total	327	73.05

pre-tested group on the Boehm Test of Basic Concepts, Form B with one exception. Data in Table 48 indicated that there were no significant differences in test scores of students classified according to any of the following variables: session, race, sex, preschool attendance, French spoken in the home, place of residence, and birth order. In the total sample, the classification of place of residence was found to be significant; whereas, in the replication study it was not. Tables 65 through 71 contain means for readiness scores of students classified according to the above variables.

Data in Table 48 for the five schools as well as the data for the twelve schools indicated a significant relationship between both post-test readiness scores on the Boehm Test of Basic Concepts and father's years of education and for post-test scores on the Boehm and pre-test. The partial regression coefficient of 0.32 contained in Table 72 showed that for each year of father's education there was a positive and significant increase of 0.32 units on the Boehm Test of Basic Concepts, Form B; while the partial regression coefficient of 0.37 shown in Table 73 for the Boehm pre-test indicated that for each increase of a unit on the Boehm pre-test there was an increase of 0.37 on the Boehm post-test.

In the case of the Clymer-Barrett scores, the data from the replication study were not in total

agreement with the findings of the main study. Data in Table 57 indicated that there were no significant differences on the Clymer-Barrett in test scores for students classified according to session, race, sex, preschool attendance, French spoken in the home, place of residence, or birth order, while the total study found significance in the cases of those classified according to race, sex, and French spoken in the home. Tables 65 through 71 contain mean scores of the above. The only significance found in the data from the five schools, other than of total program which was discussed previously, was in the relationship between test scores and father's years of education. Data contained in Tables 72 and 73 indicated that, similar to the main data, there was an increase of 1.49 units on the Clymer-Barrett for each additional year of father's education and of 1.39 units for each additional unit on the Boehm pre-test.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The major purpose of this study was to determine if there was a significant difference in readiness test scores between students who participated in a structured kindergarten program and those who participated in an unstructured kindergarten program. This investigation also sought to examine the achievements of students relative to certain variables, such as session, race, sex, preschool attendance, French spoken in the home, place of residence, birth order, and father's years of education. The relationship of variables to test scores was studied in terms of the total population of kindergarten children, as well as in terms of the interaction of program with the above mentioned variables.

Randomly assigned kindergarten children in twelve public schools in Lafayette Parish, Louisiana comprised the sample. Approximately one-half of this sample was assigned to an experimental group which received structured, early reading kindergarten instruction using materials developed by the Southwest Regional Laboratory for Educational Research and Development, Ingleside, California. The other half of the students was assigned

to the control group and was instructed in accordance with the traditional kindergarten curriculum as outlined in Lafayette Parish's Kindergarten Curriculum Guide. In the fall of 1972, one-half of the total sample was pre-tested with the Boehm Test of Basic Concepts, Form A following a Solomon Four-Group experimental design of pre-testing and post-testing, in order to determine if any practice effect resulted from the administration of the pre-test. The entire population was post-tested in May, 1973, using two instruments: the Boehm Test of Basic Concepts, Form B and the Clymer-Barrett Prereading Battery.

The data were subjected to an analysis of covariance using pre-test scores and father's years of education as covariables. The application of the analysis of covariance was utilized to partial out any differences remaining in the groups and to reduce the experimental error caused by any such differences.

In order to corroborate the findings of the main study, an additional experimental precaution was taken. A replication study was incorporated into the experimental design. Five schools involved in the main study had both experimental and control classes which were drawn randomly from the same kindergarten population. Thus the results from these five schools were analyzed separately and used as a comparison.

The data were analyzed and the results were reported in tabular form. A summary of the results of these analyses follows.

SUMMARY OF RESULTS

Unless otherwise noted, the differences found in the following results were significant at the .05 level of confidence.

1. There was no significant difference in readiness post-test scores on either the Boehm Test of Basic Concepts, Form B or the Clymer-Barrett Prereading Battery between students who had been pre-tested and those who had not been pre-tested.

2. There was a significant difference on the Boehm Test of Basic Concepts, Form B and a difference significant at the .01 level of confidence on the Clymer-Barrett Prereading Battery between readiness scores of students in a structured and an unstructured kindergarten program. The differences were in favor of the structured kindergarten program.

3. There was no significant difference in readiness scores on the Boehm Test of Basic Concepts, Form B or the Clymer-Barrett Prereading Battery for students who attended the morning kindergarten session vs. those who attended the afternoon session.

4. There was no significant difference between readiness scores on the Boehm Test of Basic Concepts, Form B of white vs. black students; however on the Clymer-Barrett Prereading Battery, there was a significant difference in favor of the white children.

5. There was no significant difference between readiness scores on the Boehm Test of Basic Concepts, Form B of boys vs. girls; however on the Clymer-Barrett Prereading Battery, the difference was significant at the .01 level of confidence in favor of the girls.

6. There was no significant difference on either the Boehm Test of Basic Concepts, Form B or the Clymer-Barrett Prereading Battery between readiness scores of students who attended preschool vs. those who did not.

7. There was no significant difference on the Boehm Test of Basic Concepts, Form B between readiness scores of students from homes in which French was spoken vs. those from homes in which it was not; however, on the Clymer-Barrett Prereading Battery, the difference was significant in favor of those from non-French speaking homes.

8. There was a significant difference on the Boehm Test of Basic Concepts, Form B between readiness scores of students from rural vs. urban areas in favor

of the urban students; however, on the Clymer-Barrett Prereading Battery, there was no significant difference.

9. There was no significant difference on either the Boehm Test of Basic Concepts, Form B or the Clymer-Barrett Prereading Battery between the readiness scores of the younger one-half of the students and the older one-half.

10. There was a significant relationship at the .01 level between the post-test readiness scores on both the Boehm Test of Basic Concepts, Form B and the Clymer-Barrett Prereading Battery and father's years of education.

11. There was a significant relationship at the .01 level between the post-test readiness scores on both the Boehm Test of Basic Concepts, Form B and the Clymer-Barrett Prereading Battery and pre-test scores on the Boehm Test of Basic Concepts, Form A.

12. There were no significant differences on the Boehm Test of Basic Concepts, Form B in the interactions between program and any of the following variables: session, birth order, race, sex, preschool attendance, place of residence, or French spoken in the home.

13. There were no significant differences on the Clymer-Barrett Prereading Battery in the interactions between program and any of the following variables: session, race, sex, preschool attendance, place of residence, or French spoken in the home; however, there was a

significant interaction between program and birth order, indicating that, based on results from the Clymer-Barrett Prereading Battery, the experimental program was more advantageous for the older students.

CONCLUSIONS

From a consideration of the data presented within the limitations of this study, the following conclusions appear to be warranted:

Overall, the structured kindergarten program appeared to be more beneficial than the unstructured program based on the scores from the two readiness measures. In looking further at the differences between the two programs, it appeared that neither the structured nor the unstructured program was more advantageous for morning or afternoon students, boys or girls, rural or urban students, those who attended preschool or those who did not, or those from homes in which French was spoken or those from homes in which it was not. However, the structured kindergarten program appeared to be more advantageous than the unstructured program for the older students.

The relationship of certain factors to the readiness scores of kindergarten children was studied. These relationships were considered to be highly significant, if significance was found on both readiness

measures; marginally significant, if significance was found on only one of the measures; and not significant, if no significance was found on either measure.

Highly significant and positive relationships were found between post-test readiness scores and both the pre-test score and father's years of education.

Marginal significance, which gave indications of some possible influence on readiness scores, was found for the factors of sex, French spoken in the home, place of residence, and race. Girls appeared to score higher than boys on the formal readiness test; those from non-French speaking homes scored higher on the formal readiness test; and those from urban areas scored higher than those from rural areas on the test to measure knowledge of basic concepts. However, there were too few black children in the sample to make a valid comparison of the effect of race based on the data from this study.

No significant relationship to readiness scores as measured by either test was found for the factors of session, preschool attendance, or birth order. Thus, the scores of students who attended the morning and afternoon session, of students who attended preschool and those who did not, and of the younger and older students were not significantly different.

RECOMMENDATIONS FOR FURTHER STUDY

1. A longitudinal study utilizing the same population should be made to determine if the effects of the programs as determined in this study are long-term or transitory.

2. Follow-up studies should be made with a population comprised of representative numbers of both black and white students.

3. A similar study should be implemented in an area in which kindergartens and early childhood education are of longer standing in an attempt to determine whether a structured program is of more benefit in an area with less experienced and less well-trained teachers than it is in an area with highly experienced teachers who have received training in early childhood education.

4. Studies should be made to determine whether there is an age differential for optimum benefit from a structured as well as an unstructured readiness program.

5. A study should be made to determine the relative attitudinal effects of the experimental kindergarten program upon the child's concepts of himself and school in general and of reading in particular, as compared to traditional, unstructured kindergarten programs.

6. A study should be made to further examine the relationship of bilingualism in the home and residence

in rural areas on the readiness scores of kindergarten children.

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APPENDIX A

Table 46

Analysis of Variance for Students in Five Schools on Post-test, Boehm Test of Basic Concepts, Form B for Pre-test Effect

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
School	4	3806.28	27.56**
Program	1	50.40	1.46
Pre-test Given	1	62.05	1.80
Pre-test Given x Program	1	1.15	0.03
Error	374	12911.83	--

**Significant at .01 level.

Table 47

Analysis of Variance for Students in Five Schools on Post-test, Clymer-Barrett Prereading Battery for Pre-test Effect

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
School	4	61771.11	36.84**
Program	1	2138.54	5.10*
Pre-test Given	1	1121.40	2.67
Pre-test Given x Program	1	1107.83	2.64
Error	374	156793.44	--

*Significant at .05 level.

**Significant at .01 level.

Table 48

Analysis of Variance Table for Students in Five Schools on Boehm Test of Basic Concepts, Form B

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
School	3	244.37	5.06
Program	1	103.85	6.45**
Session	1	1.71	0.11
Race	1	6.03	0.37
Sex	1	5.29	0.33
Preschool	1	6.68	0.41
French	1	1.37	0.08
Rural	1	2.91	0.18
Birth	1	54.99	3.42
School x Program	3	238.18	4.93**
Program x Session	1	38.42	2.39
Program x Birth	1	12.35	0.77
Program x Race	1	62.62	3.89*
Program x Sex	1	0.58	0.04
Program x Preschool	1	20.21	1.26
Program x Rural	1	5.03	0.31
Program x French	1	0.14	0.01
Boehm Pre-test	1	838.07	52.05**
Father's Years of Education	1	81.09	5.03*
Error	130	2093.15	

*Significant at .05 level.

**Significant at .01 level.

Table 49

Least Squares Mean Achievement of Students in the Five Schools Classified According to Program

Program	N	Boehm Post-test	Clymer-Barrett
Experimental	84	42.85	85.00
Control	70	37.29	69.09
Total Program	154	40.32	77.77

Table 50

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Program and Race

Race	Program		Total Race
	Experimental	Control	
White	41.46	40.03	40.74
Black	44.25	34.54	39.40
Total Program	42.85	37.29	--

Table 51

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Program and Session

Session	Program		Total Session
	Experimental	Control	
Morning	41.84	37.94	39.89
Afternoon	43.86	36.63	40.24
Total Program	42.85	37.29	--

Table 52

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Program and Birth Order

Birth Order	Program		Total Birth Order
	Experimental	Control	
Younger one-half	41.88	36.93	39.41
Older one-half	43.82	37.64	40.73
Total Program	42.85	37.29	--

Table 53

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Program and Sex

Sex	Program		Total Sex
	Experimental	Control	
Male	43.12	37.42	40.27
Female	42.59	37.15	39.87
Total Program	42.85	37.29	--

Table 54

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Program and Attendance or Non-Attendance of Preschool

Preschool	Program		Total Preschool
	Experimental	Control	
Attendance	42.65	38.04	40.34
Non-Attendance	43.06	36.53	39.80
Total Program	42.85	37.29	--

Table 55

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Program and Place of Residence

Place of Residence	Program		Total Place of Residence
	Experimental	Control	
Rural	42.96	36.48	39.72
Urban	42.75	38.10	40.42
Total Program	42.85	37.29	--

Table 56

Least Squares Mean Achievement on Boehm Test of Basic Concepts, Form B of Students in the Five Schools Classified According to Whether or Not French Is Spoken in the Home

French	Program		Total French
	Experimental	Control	
Spoken	42.77	37.13	39.95
Not Spoken	42.93	37.45	40.19
Total Program	42.85	37.29	--

Table 57

Analysis of Variance for Students in the Five Schools on Clymer-Barrett Prereading Battery

Sources of Variation	Degrees of Freedom	Sum of Squares	F-ratio
School	3	1291.51	2.15
Program	1	848.05	4.23*
Session	1	96.60	0.48
Race	1	134.97	0.67
Sex	1	474.20	2.36
Preschool	1	89.22	0.44
French	1	542.74	2.70
Rural	1	46.52	0.23
Birth	1	184.91	0.92
School x Program	3	147.52	0.25
Program x Session	1	102.55	0.51
Program x Birth	1	239.66	1.19
Program x Race	1	346.39	1.73
Program x Sex	1	255.31	1.27
Program x Preschool	1	206.64	1.03
Program x Rural	1	3.12	0.02
Program x French	1	14.98	0.07
Boehm Pre-test	1	12121.68	60.41**
Father's Years of Education	1	1785.09	8.90**
Error	130	26084.50	

*Significant at .05 level.

**Significant at .01 level.

Table 58

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Program and Session

Session	Program		Total Session
	Experimental	Control	
Morning	82.30	69.11	75.70
Afternoon	87.70	69.07	78.38
Total Program	85.00	69.09	--

Table 59

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Program and Birth Order

Birth Order	Program		Total Birth Order
	Experimental	Control	
Younger one-half	82.43	69.23	75.83
Older one-half	87.56	68.95	78.26
Total Program	85.00	69.09	--

Table 60

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Program and Race

Race	Program		Total Race
	Experimental	Control	
White	83.33	77.14	80.23
Black	86.67	61.03	73.85
Total Program	85.00	69.09	--

Table 61

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Program and Sex

Sex	Program		Total Sex
	Experimental	Control	
Male	84.48	65.84	75.16
Female	85.51	72.34	78.93
Total Program	85.00	69.09	--

Table 62

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Program and Attendance or Non-Attendance of Preschool

Preschool	Program		Total Preschool
	Experimental	Control	
Attendance	82.47	69.63	76.04
Non-Attendance	87.53	68.55	78.04
Total Program	85.00	69.09	—

Table 63

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Program and Place of Residence

Place of Residence	Program		Total Place of Residence
	Experimental	Control	
Rural	86.77	70.14	78.46
Urban	83.23	68.04	75.63
Total Program	85.00	69.09	--

Table 64

Least Squares Mean Achievement on Clymer-Barrett Prereading Battery for Students in the Five Schools Classified According to Whether or Not French Is Spoken in the Home

French	Program		Total French
	Experimental	Control	
Spoken	82.96	66.27	74.61
Not Spoken	87.04	71.91	79.48
Total Program	85.00	69.09	--

Table 65

Least Squares Mean Achievement of Students in the Five Schools Classified According to Session

Session	N	Boehm Post-test	Clymer-Barrett
Morning	81	39.89	75.70
Afternoon	73	40.24	78.38
Total Session	154	40.06	76.97

Table 66

Least Squares Mean Achievement of Students in the Five Schools Classified According to Race

Race	N	Boehm Post-test	Clymer-Barrett
White	149	40.74	80.23
Black	5	39.40	73.85
Total Race	154	40.70	80.02

Table 67

Least Squares Mean Achievement of Students in the Five Schools Classified According to Sex

Sex	N	Boehm Post-test	Clymer-Barrett
Male	80	40.27	75.16
Female	74	39.87	78.93
Total Sex	154	40.08	76.97

Table 68

Least Squares Mean Achievement of Students in the Five Schools Classified According to Attendance or Non-Attendance of Preschool

Preschool	N	Boehm Post-test	Clymer-Barrett
Attendance	45	40.34	76.04
Non-Attendance	109	39.80	78.04
Total Preschool	154	39.96	77.46

Table 69

Least Squares Mean Achievement of Students in the Five Schools Classified According to Whether or Not French Is Spoken in the Home

French	N	Boehm Post-test	Clymer-Barrett
Spoken	56	39.95	74.61
Not Spoken	98	40.19	79.48
Total French	154	40.10	77.71

Table 70

Least Squares Mean Achievement of Students in the Five Schools Classified According to Place of Residence

Place of Residence	N	Boehm Post-test	Clymer-Barrett
Rural	16	39.72	78.46
Urban	138	40.42	75.63
Total Place of Residence	154	40.35	75.92

Table 71

Least Squares Mean Achievement of Students in the Five Schools Classified According to Birth Order

Birth Order	N	Boehm Post-test	Clymer-Barrett
Younger one-half	88	39.41	75.83
Older one-half	66	40.73	78.26
Total Birth Order	154	39.98	76.87

Table 72

Change in Response Variables Associated with Father's Years of Education for Students in the Five Schools

Partial Regression Coefficients	
Boehm Post-test	Clymer-Barrett
0.32	1.49

Table 73

Change in Response Variables Associated with Boehm Pre-test Score for Students in the Five Schools

Partial Regression Coefficients	
Boehm Post-test	Clymer-Barrett
0.37	1.39

APPENDIX B

Teacher's Name _____ School _____

Type Program: SWRL ___ Session: A.M. ___

Regular ___ P.M. ___

Name	Birthdate	Race	Sex	Father's Education in Years	Pre-school Experiences? Yes-No	French Spoken in the Home? Yes-No	Resides in Rural Area? Yes-No

APPENDIX C

GUIDELINES FOR THE ADMINISTRATION OF THE BOEHM TEST

In order for this examination to yield useful data for this study, the following standardized procedures should be followed:

A. Preparation

1. Arrange to have an assistant (aide or parent) to help.

2. Read teacher's manual thoroughly and practice reading questions in suggested manner.

3. Divide the class into three or four groups with no more than 10 students per group.

4. Print names on tests.

5. Make sign for door: TESTING--DO NOT DISTURB.

6. Crayon for each child.

B. Examination Period

1. Administer Booklet 1 on Thursday, September 7, and Booklet 2 on Friday, September 8. Make-up tests should be given no later than September 13.

2. Arrange for assistant to take students that are not taking exam to another room, auditorium, or outside (e.g., story, filmstrip, color paper, or any quiet play activity).

3. Begin testing first group within the first half-hour of class time. The test should take approximately 20 minutes to give per group.

4. Separate the children to avoid "borrowing" of answers.

C. Administration of examination

1. Check sample to see all understand directions.

2. Help children turn pages and find places, but do not give any hints or helpful suggestions. (If one asks: Is this right? Say: That's a good answer.)

3. Read only what is printed in the manual--do not change the wording or give another definition.

4. There is no time limit. Allow the children enough time to respond to each question before going on.

5. Marking of answers by children

   a. Mark X on the correct picture.

   b. To change answer, circle the wrong one and put an X on the new answer.

6. Do not correct the tests.

APPENDIX D

GUIDELINES FOR FINAL TESTING

A. General Directions

1. Tests should be given May 16 through May 23, 1973.

2. Administer tests to class in two groups--one-half of class at a time. Arrange for parents or older children to take rest of children outside, to another room, etc.

3. All children will be tested this time--both the A.M. and P.M. classes.

4. Begin testing when children are fresh--the first thing in the morning or afternoon.

5. Please print child's first and last name, teacher's name, and name of the school on the test booklets.

6. Separate children to avoid "borrowing" of answers.

7. To change an answer, instruct the children to circle the wrong answer and then mark their new choice as instructed.

8. Place a sign on the door: TESTING--DO NOT DISTURB.

9. Attempt to give make-up tests--particularly to children who were pre-tested in September.

10. Tie the Clymer-Barrett and Boehm tests into separate bundles with name of teacher and school attached.

11. Do not correct the tests; instead, return the scoring key and manual along with the tests to Dr. Janes.

12. Return tests to Dr. Janes by May 29, 1973.

B. Specific Directions for Boehm Test of Basic Concepts

1. Administer Test in 2 sessions on 2 separate days:
   May 16, 1973 Booklet I (off-white)
   May 17, 1973 Booklet II (pink)

2. Follow the directions as given in Test Directions.

3. There is no time limit. Allow the children enough time to respond to each question before going on. Each session will take between 20 and 30 minutes.

C. Specific Directions for the Clymer-Barrett Pre-reading Battery

1. Administer the test in 3 sessions on 3 separate days:
   May 21, 1973 Tests I and II
   May 22, 1973 Tests III and IV
   May 23, 1973 Tests V and VI

2. Give all 6 subtests (called "Long Diagnostic Form" in the Manual).

3. Follow the General Directions, Manual p. 11-- except for #3. Please divide the group into 2 subgroups for testing.

4. Follow Directions for the Testing Session, Manual p. 13 exactly.

5. There are time limits only on Tests 5 and 6. Each session will take approximately 30 minutes.

6. Fill out rating scale on p. 15 of test booklet to best of your knowledge.

APPENDIX E

TEACHERS AND SCHOOLS IN LAFAYETTE PARISH PARTICIPATING IN STUDY

Acadian Elementary
- Mrs. Gloria Collins
- Mrs. Carolyn Harger

Broadmoor Elementary
- Ms. Theresa Brouchet
- Ms. Mary Dana Hahn
- Mrs. Janette M. Cameron

Carencro Heights Elementary
- Mrs. Judy Ann Moore
- Mrs. Joan B. Toups
- Mrs. Barbara Woods

Duson Elementary
- Ms. Jane Frances Granger

J. W. Faulk Elementary
- Mrs. Peggy Burleigh
- Mrs. Augustine Carney

F. M. Hamilton Laboratory School
- Mrs. Jacob

Judice Elementary
- Ms. Jane Frances Granger
- Mrs. Marlene Heggar

G. T. Lindon Elementary
- Mrs. Virginia Wade

S. J. Montgomery Elementary
- Mrs. Clarine Martin
- Ms. Barbara Orillion

Myrtle Place Elementary
- Mrs. Maggie Crumbley

Plantation Elementary
- Mrs. Carolyn Breaux
- Ms. Joyce Lynn Marks

Prairie Elementary
- Mrs. Albertine Adamson
- Mrs. Catherine Maloney

VITA

Mary Coletta McDonough Newkome, daughter of John Francis McDonough and Mary McGuire McDonough, was born in Elyria, Ohio on June 22, 1940. She attended elementary and secondary school in that city and was graduated from Elyria District Catholic High School in 1958. She attended the College of New Rochelle, New Rochelle, New York, for two years and was graduated from Kent State University, Kent, Ohio, in 1962 with a Bachelor of Science degree in Elementary Education.

Her teaching career began in September, 1962, as a primary teacher in Cuyahoga Falls, Ohio. After teaching four years in Ohio, she moved to Princeton, New Jersey, where she taught for two additional years.

Upon moving to Baton Rouge, Louisiana, she received her Master of Education degree from Louisiana State University in August, 1969. She then taught for the next three years in the elementary schools of East Baton Rouge Parish, Louisiana, while working toward her doctoral degree. She was on sabbatical leave for the school year of 1972-73, during which time she completed the coursework for her degree. For the 1973-74 school year she was employed as a Helping Reading Teacher

in the Elementary Reading Improvement Program in East Baton Rouge Parish.

Her other professional experiences include serving as a supervisor of student teachers for Kent State University and Louisiana State University; as an assistant to the Director of Student Teaching at Louisiana State University; as a supervisor for the Louisiana State University Summer Reading Institute for two summers; as a reading consultant to the St. James Parish Title I Reading Program; and as graduate assistant to the Director of Elementary Education, Louisiana State Department of Education. During this period, she received partial financial support for her doctoral research from the Graduate Research Council of Louisiana State University.

She is married to George Richard Newkome and is the mother of one child, Melanie Anne.

EXAMINATION AND THESIS REPORT

Candidate: Mary Coletta McDonough Newkome

Major Field: Education

Title of Thesis: THE EFFECTS OF A STRUCTURED AND UNSTRUCTURED KINDERGARTEN PROGRAM ON THE READINESS SCORES OF CHILDREN IN SELECTED PUBLIC SCHOOLS IN LAFAYETTE PARISH, LOUISIANA

Approved:

B. C. Gibson
Major Professor and Chairman

James D. Traylor
Dean of the Graduate School

EXAMINING COMMITTEE:

Doris Lemmy

Eric L. Thurston

W. R. Eglin

Jack Fimberg

Alvin L. DeVraud

Date of Examination:

July 9, 1974